

National Safety News

JULY 1952

**FOREST FIRE
DANGER TODAY**



**KEEP
WISCONSIN
GREEN**

SMOKERS BEWARE

NEKOOSA-EDWARDS PAPER COMPANY

Save Our Forests



**If this happened in
your operation—
would You Be Ready?**



The best planned safety program can't possibly safeguard employees against all the unexpected hazards that may cause arrested breathing in industry today. Poisonous or suffocating gases from an undetected leak—electric shock—heart attack—heat exhaustion—a hard blow to the body—drowning—a fall—can, at any minute, bring a crisis like one of those pictured above directly under your responsibility. *Would you be ready?*

Safety planners in increasing numbers can answer "yes" to this question. They have found that the M.S.A. Pneolator better chances of recovery in all cases of arrested breathing. This device applies automatic artificial respiration in a way that most nearly duplicates natural breathing. Providing oxygen to the lungs at a pre-selected pressure and amount, the Pneolator "breathes" for the victim . . . aids the victim to full recovery. There is

no suction cycle. Exhalation takes place by the normal passive return of the respiratory muscles.

Note: The first few minutes after breathing has ceased are the most critical. Manual artificial respiration should be started and continued until the Pneolator is in use.

**You're better
prepared with
an M.S.A.
PNEOLATOR**



Plan now to back up your safety program with this efficient, dependable equipment. Write for complete details.



Call the M.S.A. man on your every safety problem
... his job is to help you



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At Your Service: 88 Branch Offices in the United States
MINE SAFETY APPLIANCES CO. OF CANADA, LIMITED
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Only BAL-guard Eye Shields give you all this!

Look at the all-inclusive features incorporated in the Bausch & Lomb BAL-guard all-plastic coverall eye shield. It provides the utmost in protection, ease of use, comfort and economy. Exceeds U. S. Bureau of Standards requirements for protection against impact, guards against dust and splash. Ask your supplier for specifications and sample, or write Bausch & Lomb Optical Co., 90307 Smith St., Rochester, N.Y.



BAL-guard's crystal-clear one-piece acetate lens can be replaced in seconds. Lens is snapped in or out of frame, cannot be jarred loose.



2-way indirect ventilation insures a minimum of fogging. Roll-molded rims provide added comfort, give extra structural support.



May be worn over regular glasses or over prescription safety lenses. Available with clear or transparent green lenses; clear, green or opaque frames.

by
Watchful Dan
The Safety Man



THIS RAISE NOT SO GOOD

The front office tells me workman's compensation rates have been raised. And there'll be more increases as long as the accident rate keeps going up.

The way I see it, it's a darn good thing casualty companies hire experts, not only for them—but for all of us. They're constantly uncovering hazards and recommending safety measures. If we safety people work together to cut down these needless accidents, rates will go down again.

Like the casualty companies, Bausch & Lomb has specialists on eye safety problems—fellows that know exactly how to equip workers with the right safety eyewear for any job.

In your plant, if you're on the lookout for ideas—on eye health and efficiency as well as eye safety—get in touch with the Bausch & Lomb supplier in your area. Tell 'em you want to talk to the industrial eyewear man. He'll be tickled to be of service.

-Dan

BAUSCH & LOMB
Safety Eyewear

National SAFETY NEWS

Published monthly by
National Safety Council

JULY 1952

Vol. 66, No. 1

THE COVER: This reminder of the forest fire menace was erected by Nekoosa-Edwards Paper Company near Port Edwards, Wis. The four zones of forest fire danger are painted in bright colors (green, yellow, orange and red) in order of fire hazard. Each morning the indicator is set according to reports received from the state conservation department. In the picture are Karen Carlson and Patsy Vechinski, daughters of employees, and Robert Dosen, company forester.

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National Safety Council



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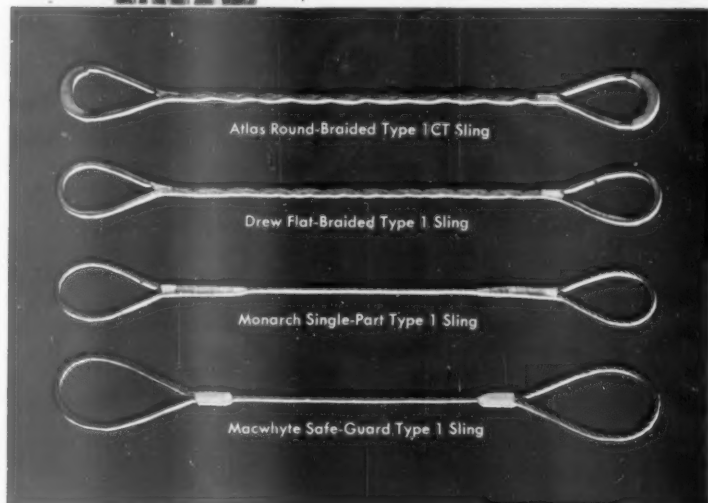
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Cut Your Fire Losses

With This Tested Rockwood Equipment



ROCKWOOD TYPE FFF FogFOAM NOZZLE WITH FogFOAM SCREEN puts out large fires in gasoline, benzol, and other highly volatile flammable liquids. Provides far greater extinguishing action than ever before possible with old-style chemical or mechanical foam equipment. Used in industrial plants, oil transport companies, refineries, airports, and municipal fire departments. Three sizes for service on 1½", 2½", and 3½" fire hose lines.

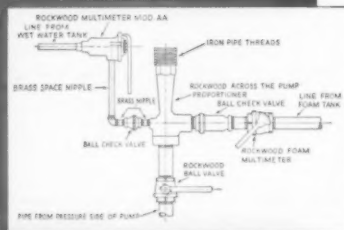
Nozzle provides three different discharges . . . FogFOAM with screen (shown), solid FOAM stream with foam shaper (not shown), and/or high-velocity WaterFOG by shutting off FOAM liquid. Through FogFOAM screen, 2½" size discharges 200 gpm @ 100 psi. Range: approximately 30 feet. Approved by Underwriters' Laboratories, Inc.

ROCKWOOD DOUBLE STRENGTH, FAST-FLOW FLUID FOAM LIQUID (3%) extinguishes large spill fires in gasoline with maximum speed and safety to firemen. More fluid, faster spreading. Mixed with 97 parts water, it forms excellent foam blanket that quickly re-seals if broken. Flows freely at sub-zero temperatures (-15°F). Clings to metal surfaces as an insulator. Will not cause corrosion and is easily washed off.

Used with fire hose line nozzles and permanently piped FogFOAM and FOAM installation. Comes in 5-gallon cans or 50-gallon drums.

Approved by Underwriters' Laboratories, Inc.

Regular Rockwood FOAM Liquid (6%) also available in 5-gallon cans or 50-gallon drums.



ROCKWOOD MODEL DUAL "B" AROUND-THE-PUMP PROPORTIONER automatically feeds FOAM liquid or wetting agent into hose lines. Eliminates waste, assures accurate mixing. Used when pressure is maintained by a pump from draft supply or booster tank. Operates in range from ¾" booster lines to 2½" hose lines.

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Maximum nozzle discharge when using FOAM liquid: 200 gpm — when using 1% wetting agent solution: 100 gpm.

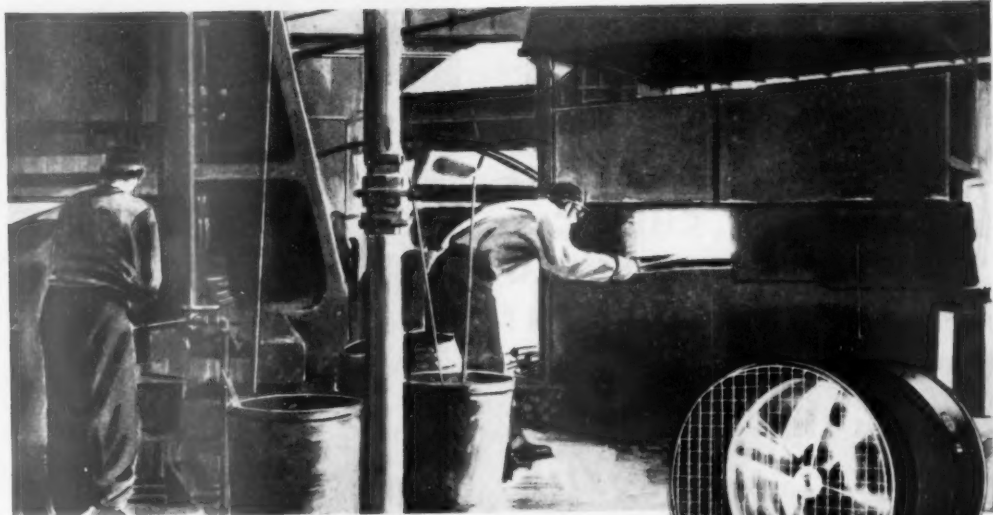
Custom-engineered proportioning systems for all mobile equipment are also available.

GET YOUR COPY of this informative, illustrated, 12-page booklet on Rockwood Fire Fighting Products. Write direct to Rockwood Sprinkler Company, 72 Harlow Street, Worcester 5, Massachusetts.



ROCKWOOD SPRINKLER CO.

Engineers Water...to cut fire losses



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CITY

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**HAS A COMPLETE
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FIRE EXTINGUISHING
EQUIPMENT**

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MODEL 20-B



MODEL 4-A



MODEL 4-B

HAND PORTABLES



MODEL 30-B

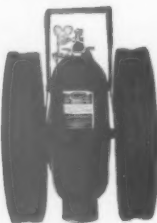


MODEL 20-B

WHEELED PORTABLES



MODEL 150-A



MODEL 350-A



MODEL 2000-B



PIPED SYSTEM



MODEL J1-340

**• STATIONARY EXTINGUISHERS • TRUCK MOUNTS,
AND PIPED SYSTEMS TRAILERS AND
FIRE TRUCKS**

There is an Ansul Extinguisher of the proper size for each of your flammable liquid, gas and electrical fire hazards. With Ansul Equipment the size and nature of the hazard truly dictate the extinguisher model to be provided. And each Ansul Extinguisher Model, regardless of size, is designed for one man operation.

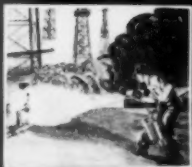
Many years of field experience and development have combined to make Ansul Dry Chemical Fire Extinguishers superior products. These years of field experience under all operating conditions have dictated to Ansul engineers the avenues for attack in their design and developmental work. With Ansul Extinguishers you get . . . watertight construction for dependable operation; sturdy, corrosive-resistant construction for long life and low maintenance costs; quick, positive operation for near-expert results by inexperienced personnel; quick, easy, on-the-spot recharge for continuing fire protection; a complete line of dry chemical fire extinguishing equipment including models approved for operation at -65°F .

For hazards involving flammable metals such as sodium, potassium, magnesium, zinc, etc., Ansul Met-L-X Dry Powder Extinguishers are available in 30, 150 and 300 lb. capacities.

Ansul Dry Chemical Fire Extinguishers are listed and approved by the Underwriters' Laboratories, Inc. and Factory Mutual Laboratories for flammable liquid (Class B) and electrical (Class C) fires. Certain models carry U. S. Coast Guard approval for marine fire protection. They are also recommended by insurance companies for control of surface fires in textile lint and paper dusts. Thousands of Ansul Extinguishers are used by petroleum producers, pipeline companies and public utilities for protection against fires in propane, butane, natural gas, illuminating gas, etc.



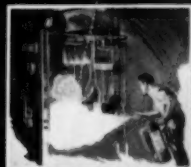
TEXTILE LINT FIRES



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Before you buy additional fire protection equipment, get complete information on Ansul Equipment. Send for File No. 216. Besides our latest catalog this file contains other helpful material published by Ansul Chemical Company as a special service to our friends and customers.

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What's YOUR Preference in Wire Rope Slings?

*(Whatever type you need...
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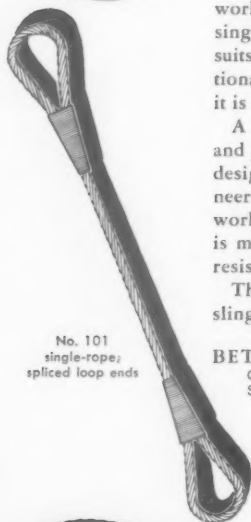
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eight-part
braided
with sliding
choker hook



No. 11 regular grommet



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two-leg hook bridle



No. 101
single-rope;
spliced loop ends

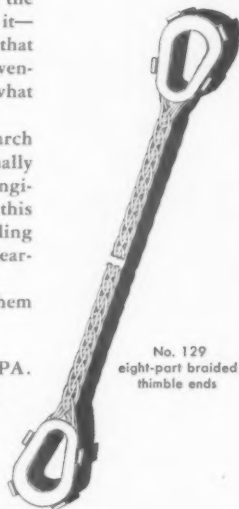
No matter what the lifting job may be, the proper sling for the work is available from Bethlehem. You name it, we make it—single-rope, grommet, braided, bridle, or any other kind that suits your requirements. Whether you want a standard, conventional type of sling or something very special, just tell us what it is and we'll manufacture it for you.

A lot of research goes into these products of ours—research and planning and forethought. Bethlehem slings are individually designed to carry the loads intended; they are carefully engineered and are fabricated by men who have specialized in this work for years. And equally important, every Bethlehem sling is made of Purple Strand wire rope, the toughest, most wear-resisting grade of all.

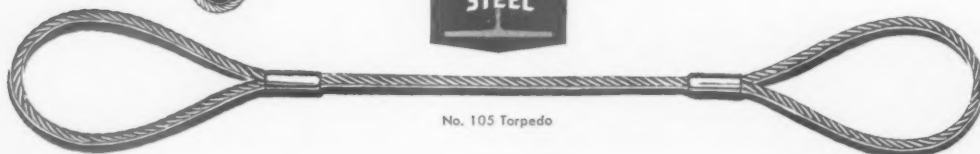
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No. 129
eight-part braided;
thimble ends



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- Ideal for corrective-protective eyewear program


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Standardize on WILLSON for your Eye Safety Program

A Complete Line to Fit All Your Workers



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Latest style; single bridge; Hi-Line temples; dressy appearance.



Plastic* Frame Style WKS
Popular "keyhole" bridge; Hi-Line temples; sideshields.



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- Wide selection of lens and bridge sizes; all these spectacles can be furnished with lenses ground to employee's prescription. Write for booklet "Good Vision is Good Business."
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Rocker nose pads; rigid top bar for extra strength; on-line temples.



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Hi-Line temples, rigid top bar; rocker nose pads, sideshields.



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Comfortable saddle bridge; rigid top bar; on-line temples.

Fitted with Super-Tough® heat treated glass lenses or Willson Plas-Tough† plastic lenses

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*All plastic frames are non-flammable cellulose acetate.

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Halifax

new **PACKAGED** carbon dioxide **FIRE EXTINGUISHING SYSTEM**

inexpensive, simple, sure!

**any pipefitter
can install it**



Do you want maximum fire-fighting power at minimum cost? Then you want the new Kidde Standard Pak. It's an inexpensive ready-made system you can build in for protection against tough fires in normal flammable liquid hazards.

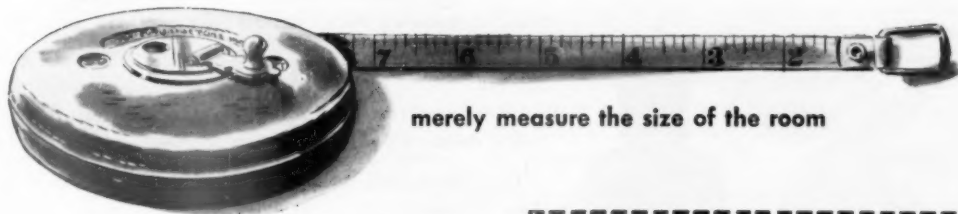
Anyone who can cut pipe can set up this pre-engineered fire extinguishing "package." Choose from six sizes for volumes up to 6,000 cubic feet.

Every kit contains Kidde rate-of-rise heat detectors, Kidde Multijet nozzles, and automatic discharge heads. Pipe and fittings are optional, as are pressure trips and switches, remote controls, sirens, gongs.

For full information send the coupon.



pre-engineered



merely measure the size of the room

Kidde

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Walter Kidde & Company of Canada, Ltd., Montreal, P. Q.

WALTER KIDDE & COMPANY, INC.
745 MAIN ST., BELLEVILLE 9, N. J.

Gentlemen: Please send me details on the
New Kidde Packaged Fire Extinguishing System.

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FIRM NAME _____

ADDRESS _____

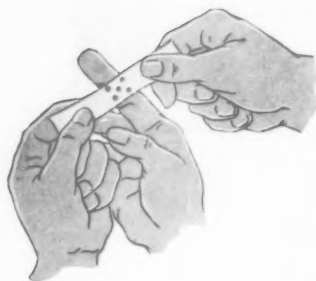
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for industrial *First Aid*

MERCUROCHROME*

(H. W. & D. BRAND OF MERBROMIN, DIBROMOXYMERCURIFLUORESCIN-SODIUM)



Do not neglect wounds, however small; even scratches and small cuts may become infected if they are not promptly and properly treated.

'Mercurochrome' (H.W.&D. brand of merbromin, dibromoxymercurifluorescein-sodium) is one of the best antiseptics for first aid use. It is accepted by the Council on Pharmacy and Chemistry of the American Medical Association for this purpose.

The 2% aqueous solution is not irritating or toxic in wounds; minor injuries are reported more promptly when 'Mercurochrome' is the routine antiseptic, because treatment is not painful.

'Mercurochrome' solution keeps indefinitely; the color shows where it has been applied.

Physicians have used 'Mercurochrome' for more than 28 years.

Be sure to include 'Mercurochrome' in your first aid supplies.

* Reg. U. S. Pat. Off

Described in New and Non-official Remedies (1950) by the Council on Pharmacy and Chemistry of the American Medical Association.



HYNISON, WESTCOTT & DUNNING, INC.



BALTIMORE, MARYLAND

This man worried
about accidents...



This man worried
about costs...



Both adopted the * **LEGGE SYSTEM**
of safety floor maintenance...

One Manager is jolted into action by a series of negligence suits. Claims for heavy damages. Lawyers. Lost time. Nuisance.

Another man is influenced by a desire to reduce maintenance costs. Treasurers can be very persistent about such matters.

Eventually they both get around to a program of LEGGE Safety Maintenance.

First step—a LEGGE Safety Engineer examines their floors for type, condition and traffic load. Then he prescribes the *right* LEGGE Safety cleaners and polishes. There is no charge for this service.

But that's not all. The LEGGE Man instructs the cleaning crews in the proper use of these materials—

and returns periodically to see that his instructions are carried out.

RESULT—beautifully polished high-gloss floors *without slipperiness*. Slip-fall accidents cease almost to the vanishing point. No more headaches.

RESULT—a saving of up to 45% in materials, up to 50% in labor . . . that adds up to hundreds of dollars, in some cases many thousands, in the course of a year.

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Why Skin-toughening PREVENTS ATHLETE'S FOOT

SHOES CAUSE ATHLETE'S FOOT



The modern shoe is the main cause of athlete's foot, says the U. S. Public Health Service (Bulletin R-674). Shoes soften and devitalize the skin. This soft, dead skin inside a warm dark shoe is ideal soil for the growth of athlete's foot fungus.

FUNGUS SPORES ARE EVERYWHERE

The fungus spores, or seeds, are as common as dust. Some of them are on the skin almost all the time. And when the skin's resistance is low, they grow and multiply. The result is athlete's foot.

The chief danger of athlete's foot is that it causes cracks in the skin. More dangerous germs can then enter the blood stream. Serious secondary infections may result.

DISINFECTING THE FEET WON'T HELP



Attempts to disinfect bathers' feet are "futile, illogical, and potentially harmful," according to skin specialists.* You can't kill all the fungus spores, and you may weaken the skin still more by trying to kill them.

WHAT IS THE ANSWER?

Skin specialists say that the best chance of preventing athlete's foot is to build up the skin's resistance to fungus attack.* A strong healthy skin is your best defense against the ever-present fungus spores.

That is the basic principle of Onox skin-toughening.

*Archives of Dermatology & Syphilology, April, 1942.

WHAT IS ŌNOX?

ŌNOX is an odorless, non-poisonous solution of five beneficial mineral salts. Both laboratory† and controlled tests show that Onox toughens the skin and makes it resistant to fungus attack.

†Pease Laboratories, Inc., New York, N. Y.

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Onox is used in a soft sponge rubber mat. One mat serves 50 bathers on a shift. Stepping on the sponge (after showering) forces Onox up between the toes, where it is needed. A good percentage of the salts stay on the skin, even after drying with a towel.

MEN LIKE TO USE THE MATS

The sponge mat is pleasant to step on. It is neat and attractive—no splash, no mess. And Onox is very refreshing to tired, aching feet.

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TRIAL OFFER... We will ship any amount of Onox and footmats for 60 days' use. If you and your men are not more than satisfied with results, you owe us nothing. For further information, write, or send coupon.

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National Safety News, July, 1952



Any way you look at it

Your telephone is worth far more than it costs.

The cost of a call can be counted in pennies.

The value is often beyond measure.



BELL TELEPHONE SYSTEM

Sweat-Resistant **Bol Tan** leather insole stays soft and pliable

These two bottoms, from one pair of shoes, were worn in a foundry for 7 months. The left shoe has a Bol Tan Leather Insole, the right one an ordinary insole.

Results speak for themselves. Only the Bol Tan Leather Insole resists the damaging attacks of perspiration.



Note Bol Tan Leather Insole remains soft and pliable as demonstrated by section cut and lifted for inspection.

Ordinary insole is cracked, curled, saw-edged and dried out . . . damaged by perspiration.

Bol Tan Insole remains comfortable, permits re-soles when ordinary leather insoles would have failed!

Ordinary insole is unfit for further wear. Result: Shoe is discarded long before uppers are worn out!



Only Hy-Test has **Bol Tan**

Sweat-Resistant leather insoles

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COST means up to twice the
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NATIONAL SAFETY NEWS

JULY 1952

The Mission Broadens

THIS IS AN ANNIVERSARY YEAR—the fortieth annual National Safety Congress. Also, this month marks my tenth anniversary as a member of the staff of the National Safety Council. So some sort of progress report seems to be in order.

Whether we look back 10 years or 40, it is clear that we have got off to a good running start. It is also clear that although much has been done, there is still much more to be done. The most encouraging fact is that we continue to have more people in more fields contributing to our progress each year. I am thinking not only of the officers and members of the Council, but of the many organizations and individuals who voluntarily cooperate with us in the safety movement.

This continuously broadening volunteer support of the Council is one of the most encouraging trends of recent years. And I believe this support has come largely through a broadening concept of our mission.

It was logical for the Council to be founded by technical people, for the initiative had to come from those to whom safety was closest. But it is just as logical that this organization inevitably should include more of those who are concerned with safety, not only by their occupation or business, but by their own welfare. Broad acceptance of safety principles is not possible unless safety-mindedness is made popular. And we have made

a great deal of progress in popularizing safety lately.

This has come about through a freer public information approach, broadened committee and support structure and the institution of conferences in the various fields—industrial, traffic, public information, home, farm, school and college and community organizations.

When the Council was started 40 years ago, it concentrated its efforts on the industrial worker, because it was industry that operated the Council. Today the industrial worker is influenced safetywise not only by his employer, but by his wife who learns safety through her clubs, PTA and other affiliations, by what he reads in the press and hears on the air, and even by his children, who are taught safety in school.

Since this is so, I can assure you of even greater results in whatever your particular field of safety may be if you will continue to merge the institutional interests of your organization with the interests of the broader safety job. The more popular and more generally accepted safety becomes, the more specific will be the results.

Success in safety depends upon the efforts as well as the cooperation of many people—and many people have made 40 years of organized safety—yes, and the 10 years of my office—a most gratifying experience.

Ned H. Dearborn

Safety Is Good Business

By H. W. ANDERSON

Immediate economic benefits of accident prevention are obvious. But there are indirect and intangible results that are no less valuable



H. W. Anderson

THESE conferences have been held for several years. There has been general agreement on principles. The big question is: "Conferences are fine; these principles are sound; but what do we do now?"

It seems that we have two basic objectives: one deals with motivation, the second deals with the "know-how" of safety. The first approach to motivation is the "alarmist" approach — the effort to shock people into activity by quoting statistics on the number of accidents, the losses to the individual, to the employer, to the nation, in terms of blood and in dollars and manpower. This is based upon an assumption that employers, employees, and the people generally, are complacent, and that people will be motivated only by a shocking dramatization of horror, financial cost and manpower losses.

That approach misses the mark for several reasons. First, it leads so easily to exaggeration and distortion. There seems to be a tendency to take all of the accidents in all occupations and speak

of them as though they were happening only in our industrial plants. When publicity is released referring to 16,000 persons killed in so-called industrial accidents, the public gets the impression that these are largely in manufacturing. There usually isn't much in the story to indicate that only 17 per cent took place in manufacturing plants and that the other 83 per cent took place on farms, on construction jobs, in forests, in mines, in stores and in government services.

Those of us in manufacturing are disturbed by any publicity which leads the public to believe that the accident problem in industrial plants is five times as bad as it really is. The American people aren't influenced by publicity which doesn't square with their own experience.

The alarmist approach misses its mark for another reason. It assumes that employers are complacent about the safety of their employees, and have to be shocked out of it. Employers have been concerned about this accident problem. They have been doing something about it, and they have reason to take pride in the results which have been achieved.

The second approach which has been suggested is that of compulsion—especially legislation. We've had safety legislation at the state

level for many years. Proposals have been made in the Congress for further intervention by the federal government in the safety field.

We are all interested in cutting down the number of accidents; we are all interested in safety. But will more laws or further efforts to use compulsion further stimulate these interests? This approach has been carried to an extreme in a number of foreign countries. Yet the safety record in those countries isn't nearly as good as it is here. Foreign visitors are amazed by the provisions made for safety in our industrial plants. They express admiration for the remarkable safety records which have been achieved, and explain it by the fact that in America reliance is not placed upon legislative minimums, but every effort is made on a voluntary basis to put into effect at each work place the best safety principles and practices.

There is a third approach which has to do with both motivation and the "know-how" of safety. It is the "Conference" approach. The President's Conference is an example. The Governor's Conferences is another. The conference approach has its place in the safety movement. The National

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H. W. ANDERSON is vice president, General Motors Corp., Detroit, Mich. This article has been adapted from a talk presented by Mr. Anderson before the President's Safety Conference in Washington, D.C., June 3, 1952.

Eight-Point Program Presented at President's Conference on Industrial Safety

By KENT W. FRANCIS

THE PRESIDENT'S CONFERENCE on Industrial Safety, held in Washington on the first days of June, set a stage and painted a back-drop. It thereby did a great service to a great purpose.

For 40 years or more, those who practice industrial accident prevention have been trying to capture the support of American public opinion. Without such support the safety movement, as it affects hazards, would be not a national program, but a preoccupation of certain professional

groups and a principle of operation only for those employers farsighted enough to identify their interests with it.

The President's Conference was an impressive occasion. Convened at the call of the most powerful public officer in the world and addressed personally by him, staged in the magnificence of the City of Washington, attended by 1250 delegates from 43 of the states and from all of the territories, it was food for thought, as well as a platform for discussion. The Conference did much to give dignity and substance to the safety movement.

A cynic could say that the Con-



President Ned H. Dearborn, National Safety Council, addressing the Conference on small business safety.

KENT W. FRANCIS is Director of Publications, Industrial Department, National Safety Council.



Secretary of Labor Tobin, President Truman, and Secretary of the Air Force Finletter, at the conclusion of the President's address to the Conference.

ference was cut and dried, a philosopher could say that it was a splendid exhibition of the American way of life, and a practical safety man could find in it enough high level thinking to justify his efforts and to guide his immediate future.

The President's Conference was not a chummy affair. Nor was it, except in some of its minor aspects, particularly concerned with the mechanics of safety engineering or the materials of safety training. It was a national platform for the statement of policy, for the affirmation of belief, for the discernment of trends. Its appeal was not to the journeymen of the safety movement, but to its statesmen.

William L. Connolly, Director of the Bureau of Labor Standards

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Dusts or particles in fumes or smokes in the atmosphere may be collected by portable electrostatic samplers. Instruments of this type were used by the U. S. Public Health Service in the Donora, Pa., "smog" investigation by the U. S. Public Health Service. (Mine Safety Appliances Company)

Here's a discussion of the air pollution problem in the individual plan and some ways of combating it.

Is Your Plant Contributing To Air Pollution?

By HAMNETT P. MUNGER

THE MORE COMPLEX air pollution problems are usually associated with population centers. The larger the city and the larger the surrounding industrial area, the more difficult is the analysis of the problem. In all of these areas, it is necessary to locate the principal sources of contaminants, and to study the most

economical method for reducing their concentrations in the effluent gases from each individual plant.

How may air pollution be defined? In the *Manufacturing Chemists' Association Manual*, it is defined as "the presence in the air of substances put there by the acts of man, in concentrations sufficient to interfere with the comfort, safety or health of man, or with the full use and enjoyment of his property."

This is a common-sense definition. It does not specify definite limits for the contaminant concentration of effluent gases, regardless of topography, meteorology, and other factors. It takes into consideration the ability of

the atmosphere to disperse contaminants and man's use of tall stacks and other devices for minimizing the nuisance of industrial contaminants. It recognizes that there will be a difference between the air in a residential area and an industrial area, so long as it does not interfere with "comfort, health and the enjoyment of property."

In all communities, we must recognize that there are many potential sources of air pollution other than industry. Among these are the railroads, public buildings, schools, incinerators, small commercial boiler plants, and other locations where combustion processes are carried on. When only one plant is located in a com-

HAMNETT P. MUNGER is in charge, Air Pollution Research, Batelle Memorial Institute, Columbus, Ohio. This article has been slightly condensed from a paper presented at the Air Pollution Abatement Conference which was sponsored by the Manufacturing Chemists' Association, Inc., in New York City, February 25-26, 1952.

munity, it is usually not difficult to locate the source of the contaminants. The nature of the pollution and simple observation should be sufficient.

In a large industrial area, the problem becomes more complex and other means must be employed in air-pollution studies. Topography may become an important factor. This was evident at Trail, B. C., Donora, Pa., and Los Angeles (1, 2, 3).

Meteorological conditions in the form of inversions, fogs, and extended periods of low wind velocity may result in accumulation of contaminants in a local area. These factors are especially important when considering the location of a new plant. In such cases, the plant design should consider not only the small community which may be nearby, but also the inevitable growth of the community right up to the very gates of the plant.

Kinds of Air Contaminants

In any study of air pollution in an industrial area, the problem of contaminant concentration is usually divided into three parts, depending on the particle size of the contaminants (4), namely, dirt fall, aerosols, and noxious gases. Methods for sampling and determining concentrations of these three classes of contaminants have been described elsewhere (5, 6). Many of these methods have the objection that they determine the amount of contaminant present during only a very small portion of the 24-hour day. It is well known that these contaminant concentrations vary widely with the time of day and with different meteorological conditions.

Dirt-Fall Measurements

Clearly, it is important to obtain an integrated picture or a continuous record of the contaminant concentration in studying air pollution for a metropolitan area. Conventional dirt-fall measurements (3) are one of the methods available for this type of study. The usual method for these measurements is to expose a collection

jar for 30 days and determine the amount and nature of the dirt which falls into it. There are many details to be considered if the results are to be reliable. Among them are:

1. That the location of the jar is truly representative of the area it is to represent,
2. That it will not be affected by local conditions,
3. That the container has the proper size, shape, and contour,
4. Method of interpreting and presenting the results, and
5. The effect of local meteorological conditions, and many others. This subject is too large to be considered here and will probably be the subject of future papers.

The simple dirt-fall jar indicates how much dirt has fallen at a location but gives no clue of the origin of the dirt. To fill this need, a directional dirt-fall collector has been developed by Battelle, as shown in Figure 1. The dirt which falls while the wind is blowing from various directions falls in one of the eight peripheral jars. When the wind velocity is below three miles per hour, the dirt falls in the calm jar, in the center. An auxiliary wind vane controls the positioning of the cover so that it is always over one or the other of the sampling tubes.

When the wind velocity is above three miles per hour, the outer tube is open; when it is below this velocity, the center tube is open. A more complete description of this instrument is given elsewhere (9, 10). Pilot models are giving satisfactory performance in the field.

A Good Air Pollution Study Program Should Include:

1. A determination of the nature and source of the contaminant or contaminants responsible for the air pollution,
2. A determination of the properties and concentrations of the contaminants in different parts of the area and at the sources, and
3. An investigation of the methods which may be used at the source to secure the most economical process for reducing the contaminant concentration in the effluent gases and in the community.

It is also necessary to know the number of hours the wind blows from various directions in order to calculate the rate of dirt fall. A recording anemometer can be used to furnish this record. A new directional wind-hour meter is being produced to furnish this information from direct-reading dials. This instrument will simplify the calculation of results obtained from the directional dirt-fall collector.

With this equipment, it should be possible to correlate the direction from which the wind is blowing with the highest rate of dirt fall. In addition, analyses of the dirt samples in various jars might give clues as to their sources. If a large metropolitan area were divided by a river, several of these directional dirt-fall collectors, located along the river, might give information indicating from which side of the river the dirt falling in the area was coming. In any highly industrialized area, this collector would be useful in correlating the relative dirt fall with wind direction.

Aerosol Determinations

Early determinations of aerosol concentrations were made in England by Owens (8) and in this country by Ward Davidson (11) of Consolidated Edison Electric Company. During the past several years, a number of continuous aerosol filters have been designed (12). All of these depend upon drawing a predetermined amount of air through a definite area of filter paper. The discoloration of the paper or its light transmission is used as a measure of the aerosol concentration. In some cases where the time period is extended, the spot may be analyzed chemically.

This type of equipment has been used extensively in England for studies in smoky, industrial areas. Its use in this country has been limited by the number of man-hours required to collect and interpret the data. With the increasing interest in studying air pollution in industrial areas, it is quite pos-

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The PIONEERS of 1912

By BILL ANDREWS

The First Cooperative Safety Congress attracted little attention. But it launched a movement of great social and economic importance

IT WAS a group of lonely men that met in Milwaukee in 1912 to hold the First Cooperative Safety Congress.

They were a far-spread skirmish line, working more as individuals than as a team, pioneering in behalf of the new-fangled idea that accidents could and should be prevented in industry. There were some contacts between them, but they were not numerous and not regular.

One steel safety man might know a few other steel safety men. A Chicago or Pittsburgh safety man might know other safety men in his city. But even in great industrial centers the number of such men was small, and the sense of aloneness was strong.

This sense of aloneness was heightened by the attitudes these men often encountered among management and production forces in their own companies. "Accidents? We've always had 'em, always will," was a stock sentiment among superintendents and laborers who had grown up in industry without the services of accident prevention staffs. There was a further implication in their attitude—"We're doing all

that can be done to stop accidents, and an outsider can't know our problems. So go away and don't bother us, we've got steel to make and freight to ship."

Yet these safety men held jobs and drew paychecks. Something was stirring in the mind of top management in a company here, a great corporation there. U.S. Steel's Elbert Gary had spoken for safety with a voice carrying great authority. In the steel industry generally, the impact of the Russell Sage Foundation's study of accidents and compensation in Pittsburgh was still felt—that terribly factual indictment of a set of conditions that could be duplicated in many other areas and industries.

The National Association of Manufacturers had published its survey of European safety and compensation practice—clearly superior to American practice in the first decade of the 20th Century. There were legislative implications to the study, and these attracted the most attention. Workmen's Compensation Laws were on the books or in legislative committees up and down America. But back of the political and legislative aspects were two hard, inescapable

facts—that America's industrial accident toll was tragically high, and that Europe's experience indicated a genuine possibility of reducing this toll.

So, hesitantly, uncertainly, experimentally, industrial firms were here and there putting on safety inspectors and advisors. Will Cameron, safety man for the American Car Foundry Co., was out showing foremen groups slides made from photographs taken in the foundry's shops—photos that shocked even the superintendents of the plants in which they were taken.

R. C. Richards, heading the new Central Safety Committee of the Northwestern Railroad, was hammering away at safety and spreading the slogan "Safety First." Dr. Joseph A. Holmes, director of the Bureau of Mines, was stirring a nation's conscience





about coal mining safety. C. W. Price was making safety a part of the job of the Wisconsin Industrial Commission. David Van Schaack was pioneering the safety job with Aetna Life.

Perhaps no group of men was more conscious of the bitter fact of accidents than certain engineers in the steel industry. One of these was a man named Lew R. Palmer. Mr. Palmer was more than an engineer—he was a crusader and an organizer. At 31 he had been appointed electrical superintendent of Jones & Laughlin in Pittsburgh. The following year, 1907, he helped organize the Association of Iron and Steel Electrical Engineers. In 1908 he became chairman of the association's newly organized safety committee. In 1910 he became president of the association, as well as Jones & Laughlin's first safety director.

It was Lew Palmer who conceived the idea of a national safety congress. To the job of organizing this meeting, he gave the same driving energy that had made him an All-American end at Princeton. He was given approval to hold such a congress in connection with a convention of the

association. He wrote, visited, persuaded, the leading safety men of the country. Almost single-handed, he created an interest in and desire to attend the Congress among leading industrial, insurance and government safety people—and among some executives whose primary interest was not safety.

When you talk to the old timers who went to Milwaukee at the end of September 1912, you don't get too much specific information about the content of speeches, the exact sequence of events, the details of arrangements. But you get from them some of the tremendous feeling of enthusiasm which came when these isolated safety workers found themselves, for the first time, members of a national team, found that they were not alone, found that other men—men of stature—were battling shoulder to shoulder with them in a fight to prove American industry humane and wise enough to challenge slaughter.

The sessions opened with a prayer, offered by Dr. Edward A. Steiner. It is a prayer well adapted to the spiritual needs of the group to which it was delivered, and

actually a ringing expression of safety men's aspirations in the year 1952. It was:

"Oh Lord, our God, who dost promise to those who meet in Thy name, Thine own presence, we have come together not to consider our own weal or wealth; we have come here in Thine own name to consider the well being of our fellow men. . . . May our consideration of the safety of labor and the toiler be rewarded by a higher respect for humanity as a whole, a greater regard for law, a purer and deeper and higher patriotism. . . . Bless the president of this Association, all the officers, all those who take part, and may it be as solemn as it is sacred, and may it be as useful as we try to make it whole. We ask it all in the Master's name, who gave himself for the good of men. Amen."

Exact figures on attendance at the Congress are lacking, but most estimates put it at about 250. Sessions were held over a six-day period, September 30 through October 5. They were held at the Pfister Hotel, still a leading Milwaukee meeting place.

Congress meetings covered a
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The Whole Man

By DR. RAYMOND H. FLETCHER

A person functions as a unit. Teach him to be safety conscious and you affect his whole life

WHAT MAKES a woman let her hair get tangled in a drill press rather than wear a hair net? Why will a man light a cigarette while standing right over a gas leak that he was sent to repair? You are confronted daily with the fact that safety is a psychological problem. H. W. Heinrich pointed out this fact in his book *"Industrial Accident Prevention"*, and for twenty years it has been recognized as such.

Our approach to safety therefore, must be in terms of psychological solutions. There are two primary objectives which go hand in hand:

1. Knowledge of "how to do a job in a safe manner" and
2. Desire to perform the act in the manner we know to be safe.

That these two objectives can be accomplished is evidenced by reports of safety records that run into millions of man-hours.

How does improved performance come about? How do you get a man to want to be safe?

We must recognize three psychological principles:

1. Safety is a part of a man's total personality.
2. Management influences a man's personality.
3. The safety director is the eyes and the ears of management in this special area.

The handling of safety is like all other company operations.

DR. RAYMOND H. FLETCHER is Regional Director, Rohrer, Hibler & Replogle, Dallas, Texas. This article has been adapted from an address before the Oklahoma Safety Council.

What makes a man want to do a job safely are the same factors which make him want to work efficiently or cause him to have interest in his job and in his company. These factors are all part and parcel of an individual.

We don't have one segment of a person that is safety conscious; another segment of him which is cost conscious; and another segment which consists of mechanical ingenuity. These things don't turn on and off at will; they operate simultaneously and are elements of a man's total make-up. A man operates as a unit. His job is not working for a living; it is a vital part of his living. When you teach a man to be safety conscious, you are affecting his whole way of living. We know that men who have a high rate of accidents in one job continue to have accidents when moved to another job.

Studies have been made to discover what kind of people these accident prone individuals are. They seem to make up 25 per cent of the working population and cause 75 per cent of the accidents. One taxi firm investigated their drivers with high accident rates and found* the following was common to each of them:

1. In school his academic standing was average; he had his share of truancy, and left school to seek independence.
2. His work record is filled with short-time jobs, and poor adjustment to his previous employers.
3. His driving habits are marked by his being easily distracted, annoyed by other drivers; he criticizes his own mis-

takes in others; he honks the horn often, races away from the stop light, has a marked mechanical interest, but no concern over mechanical limitations of his taxi. His car is untidy, dirty, and has flashy accessories, and he is discourteous to his passengers.

4. He dislikes discipline, abhors routine, has a strong desire to be his own boss, and considers only the immediate future and the satisfactions of each day.

5. He is impulsive—acts on the spur of the moment.

6. He has an unusual amount of resentment against persons in authority.

7. He wants to be pampered.

8. He avoids responsibility.

These are the workers who cause 75 per cent of the accidents. The remaining 25 per cent of the accidents are caused by people like you and me. They have their ups and downs, their moments of anxiety and frustration. They are more susceptible to accidents during these times of emotional strain than when their morale is high and when they are free from distracting worries.

How do you influence a man and his total personality? We know that we are influenced by other people—by the way they think, and what they do. The extent to which we are influenced by others depends upon how important they are to us. To a working man, the boss is The Important Man.

How the boss thinks and feels and acts determines how the man down the line thinks and feels and acts. If management appears to hand down orders rather than communicate the why's and wherefore's effectively with their employees, the workers resent this kind of treatment and may disregard rules of safety which they

*"The Accident-Prone Driver," W. A. Tillman and G. E. Hobbs, *Best's Fire and Casualty News*, February, 1950, pp. 33-41.

know but become careless in following. If management is impulsive in instituting new policies, or tends to procrastinate in attending to something which should be done immediately, the workers tend to worry, to become frustrated, and because of their emotional upsets, they are less skillful in performing job operations.

If management provides the right kind of leadership, the workers will be alert to hazardous operations. In short, they will be efficiency minded and safety minded.

Management is just as responsible for the kind of men it produces as for the kind of products it produces. Too often management thinks of machines, barrels of oil, and sales volume as of primary importance, and leaves out the human elements which go into the operation of machines, the production of oil, and the soliciting of sales.

Where management takes such a one-sided approach to the conducting of total business operations, we can expect the people to function in a one-sided manner. If management talks simply in terms of miles of pipeline to be laid, how can we expect the men down the line to think in terms of that objective and then add on safety, cost, and efficiency on their own motivation? We are expecting the worker to include more in his thinking than management does in their thinking.

Some of our efforts at safety have not been productive, because we spend more time running a program than we do working with people. We look upon safety as a technique rather than a basic aspect of personality. If we try to teach safety as a technique before we consider the feelings and attitudes and motivations of workers, we get the cart before the horse. We become tinkers, working on the periphery of a problem rather than at its core.

It is a great temptation and a rather common practice for top management to delegate the responsibility for safety into the lap

NATIONAL FARM SAFETY WEEK, 1952

By the President of the United States of America

A Proclamation

WHEREAS accidents caused by indifference and thoughtlessness continue to rob the Nation of the lives and services of thousands of farm residents each year; and

WHEREAS the number of these unnecessary casualties can be greatly reduced by the exercise of caution and intelligent effort on the part of each farm family; and

WHEREAS the conservation of manpower and of property is vital to national defense:

NOW, THEREFORE, I, HARRY S. TRUMAN, President of the United States of America, do hereby call upon the Nation to observe the week beginning July 20, 1952, as National Farm Safety Week, and I urgently request every farm resident to cooperate in carrying out effective safety measures. I also request all organizations and persons interested in farm life to join in a campaign to emphasize the importance of developing attitudes toward safety which will help prevent accidents on the farm and elsewhere.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the Seal of the United States of America to be affixed.

DONE at the City of Washington this 29th day of March in the year of our Lord nineteen hundred and fifty-two, and of the Independence of the United States of America the one hundred and seventy-sixth.



By the President:

Dean Rusk
Secretary of State

Harry S. Truman

NATIONAL FARM SAFETY WEEK will be observed July 20-26, 1952, by proclamation of the President. He has requested all organizations and leaders interested in farm life to join in the continuing drive to reduce accidental deaths and injuries to farm people.

The theme for National Farm Safety Week is "Adopt right attitudes: Think Safety—Act Safely."

The campaign will be launched officially in a nationwide broad-

cast over the ABC's "American Farmer Program" from a luncheon in Washington, D. C., at 12:30 p.m., E.S.T., July 19. National agricultural leaders will participate.

Campaign posters, stickers, letter-enclosures, check lists, leaflets, movies and other publicity aids are now available from Farm Division, National Safety Council, 425 N. Michigan Ave., Chicago 11.

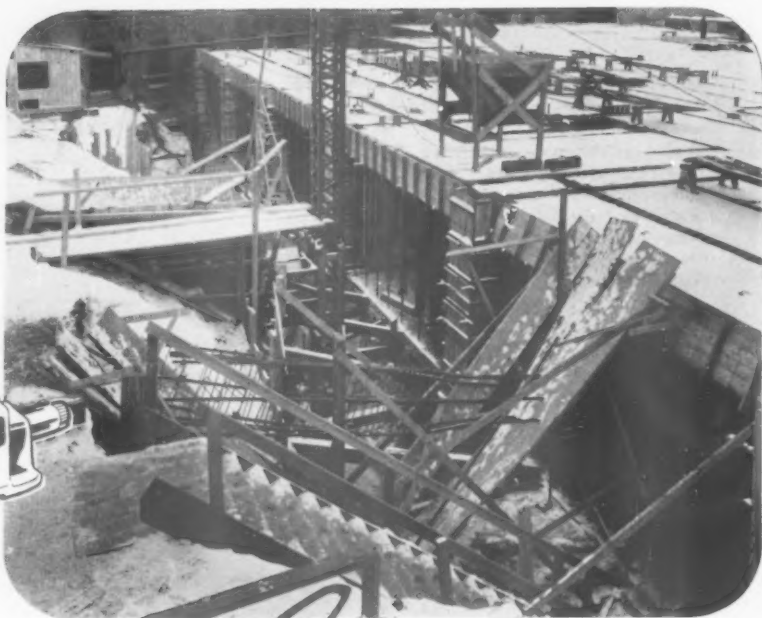
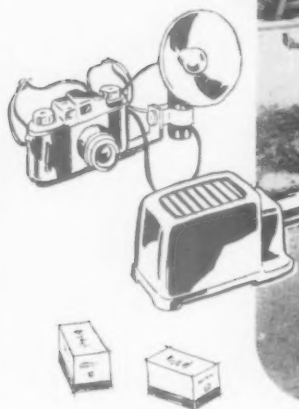
of the safety director and to wash its hands of the continuity of its own personal activity in promoting safe living. Management's responsibility for safety cannot be delegated in such a manner. Safety directors are important, but they cannot assume all

the responsibility for this essential function. The accident rate is in direct proportion to management's interest in the total problem of working with people.

Thus, if a safety director is going to approach this psychologi-

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A defective plank broke and dropped some men ten feet. The picture was used for instruction in safe construction methods.



Color Slides

HOLD THEIR INTEREST

By NORMAN HOWDEN

Color photography provides a wealth of educational material, economically. It's a fascinating hobby, too

THE SAFETY ENGINEER can lecture to employee groups until both they and he are exhausted. He can deluge them with pamphlets, posters and other literature until they have to dig themselves out like a Montana rancher after a six-day blizzard—but there's nothing that will make the lesson stick quite so effectively as will pictures—especially projected pictures.

NORMAN HOWDEN is a member of the staff of the *Rochester Democrat and Chronicle* and their scientific writer.

The more realistic they are—the more graphically they show the actual conditions under which the employees work, the hazards to which they are exposed, and the results of failing to follow proper safety practices—the more effective they will be in promoting safety.

Motion pictures are excellent, but they have severe limitations.

They cost quite a lot, so only the largest industries can afford to produce them. And, while there are a number of fairly good ones that can be borrowed, they demonstrate safety principles in surroundings that have only remote similarity to conditions in the plant in which the lessons are to be applied.

All this points directly to the use

of still films and color photographs, in the form of 35 mm. color slides for projection. They are the best, most economical, and most convenient method for emphasizing any safety message. In color pictures everything can be seen as it appears naturally. There's no possibility of confusing blue with yellow, or red with black, for the colors all are seen in their true hues, rather than as varying shades of gray.

The 35 mm. slides have another big advantage. When projected, the pictures show up on a screen many times larger than any photographic print made from a negative coming from a press size camera. Objects in the photograph appear more nearly their right size, or, in many cases, are even larger. Thus, a detail that might be overlooked on even a good-sized black and white print would stand out clearly in a projected color slide. In addition, projected slides can be viewed simultaneously by a large group while a lecturer points out pertinent features.

But probably the most important factor in favor of the 35 mm. color slide is its economy. Initial equipment required, including a 35 mm. camera, flash attachment, projector, screen, and film for a moderate number of slides, need not cost more than \$150 for good-quality articles. With that equipment, the pictures can be made for less than 30 cents each, including the cost of a flash bulb. Operation

of the equipment is no more complicated than any other kind of photography, and good pictures can be produced by almost anyone. Thus, accumulating a file of color slides demonstrating safety principles presents no financial or other problems that would prevent even the smallest industrial firm from attempting such a project.

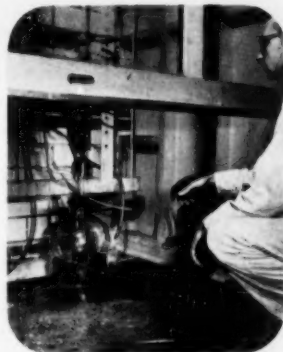
The method of processing the 35 mm. color slides also makes it easy for any establishment to have them. There is no need to set up a darkroom. With one brand the exposed film is simply mailed to the manufacturer, in a special container provided for that purpose, and in a few days the photos are returned, all mounted in slides ready for projection. The cost is included in the purchase price of the film. With another brand, the initial cost of the film is less, and exposed film can be mailed to any of a large number of processors who, for a small fee, return it in individual slide form, ready for projection.

Now we come to the question of what to photograph, and how to use the pictures. Here, what we need to remember is that each photograph is to play a part in putting across the message of safety, either in the indoctrination of new employees, or in reminding more experienced workers that it does not pay to let familiarity with hazards breed carelessness.

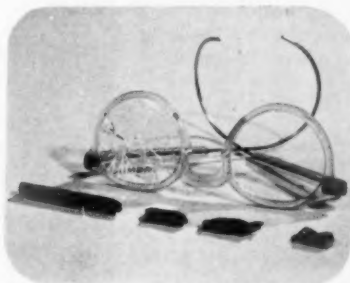
Every safety lesson divides it.
—To page 79



When loose clothing gets caught in machinery the result is sometimes too gruesome to display. But even this exhibit carries an emphatic lesson.



What happens when chemicals explode during mixing. The camera recorded the result to emphasize the need for protective devices.



A picture that needs no explanation.



An example of poor piling or loading can be shown graphically by photographs.



Spot-welding magnesium. Note gloves and face shield on operator.



Belt-sanding magnesium, showing water wash dust-collector.

MAGNESIUM is the lightest commercial metal. It is used as such or as alloys in many structural forms. Being light, it is extensively used in aircraft and transportation, and any place where light weight and high strength are advantageous. Portable gas engines are made of magnesium and even pancake griddles.

Magnesium, when molten or when finely divided, oxidizes rather fast under development of heat, i.e., it will burn if certain precautions are not taken. The fire danger which some people associate with magnesium probably is

WALTER BONSACK is Vice-President and Director of Research, Magnesium Company of America, Chicago. He was born in Berlin, Germany, in 1901, graduating from the Technical College of Berlin in 1924. Since coming to the United States in 1924 he has developed many patents covering alloys, casting practices, furnace construction, fluxes, etc. He has served as chairman of the Aluminum and Magnesium Division, American Foundrymen's Society, and currently is serving on the executive committees of many technical and trade associations.

Handling Magnesium Needn't Be Hazardous

By WALTER BONSACK

caused by its early application in flash powder, in fireworks, and more lately in incendiary bombs. Most people do not realize, however, that the starting mixture in the magnesium bomb is aluminum and iron oxide and the amount of aluminum burned in this bomb is probably just as large as the magnesium.

The "danger" associated with handling magnesium is no greater than handling coal, wood, aluminum, grain, or any number of common materials. Coal dust, flour dust, wood dust and aluminum are easily ignited and are also explosive. Wood shavings, coal, aluminum shavings and simi-



Walter Bonsack



Operator removing magnesium die casting from die.

lar material will sustain a very good fire if allowed to ignite—so will magnesium shavings.

Large boards and lumps of coal are difficult to ignite. Large aluminum or magnesium pieces are not easily ignited because they conduct heat away rather fast. The fire danger of magnesium depends on the prevailing conditions as with all other materials. Underwriter's Laboratories issued a report to the effect that magnesium alloys are safe materials to be used in housings of portable electrical appliances under all ordinary conditions. If the alloy is at least .080



Pouring magnesium permanent mold casting. Hose at lower left introduces sulfur dioxide to mold prior to pouring.

inch thick, danger from fire is very small.

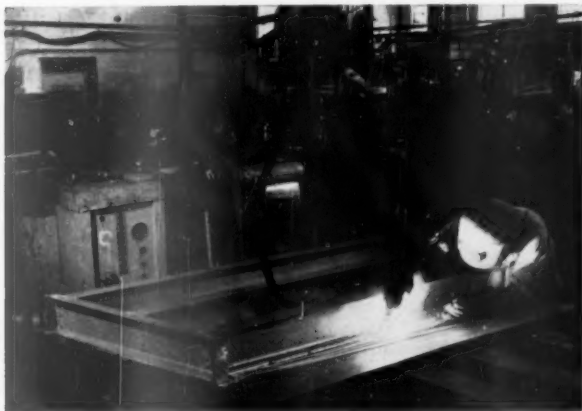
Magnesium in its production and use is handled in two very distinct phases which have their particular safe handling methods. These two are the liquid and the solid phase. The liquid phase pre-

dominates in the manufacture of the metal, its alloys and some of its semi-finished and finished production, as billets and castings production.

The raw metal magnesium mostly is produced electrolytically from magnesium chloride. This magnesium chloride may be produced from ores such as dolomite, from salt brines as found in Michigan or Ohio or from sea water which is an unlimited source of magnesium. The electrolytic process is carried out in a "cell furnace" and at regular intervals magnesium metal is withdrawn from the furnace. This metal, although liquid and quite hot, does not "burn" because it is protected from oxidation by sulfur dioxide.

Two other processes were used during World War II. Both produce the metal less economically than the electrolytic process and were not used after the war. Some of these plants, however, are being

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Manual inert arc welding of magnesium.



Change of Command

(Fiction)

By BILL ANDREWS

July 1, 1952

CLAUDE JACKSON stood at the head of the conference room table, looking very old, very worn, his immaculate collar and foulard tie limp on the shrunken neck.

"I want," he said, "to know what is wrong. It is almost three years ago that I stepped out of the presidency of Jackson-Barnes. I have not interfered with details of operations. But I have watched results, and I don't like them. Now I am going to interfere—at least I am going to find out why you gentlemen are falling on your faces running a company that I turned over to you in good shape. As chairman of the board, that is my responsibility, and I don't like

people who fail their responsibilities."

I looked at the back of Joe Roscoe's neck, expecting it to turn red. It didn't. Our president's neck bent, seemed less fat than usual. I knew he was afraid, not angry, not embarrassed. Joe, the super salesman, the back slapping extrovert, was cringing under attack.

Larson, our vice-president for manufacturing, was looking up into Jackson's face from his seat across from Roscoe. There was no weakness in the square shoulders.

"I don't think we fell on our faces," he said quietly, with only a little anger edging the voice.

Ten years fell from Jackson's lined face, as anger and the joy of battle turned him into a bantam rooster. "You don't think so, eh! Do you know what has happened to costs, to sales, to net income? Have you got to make the choice I do—the choice of whether to pass a dividend or pay one out of our capital?"

Lars sounded grim. "I know what happened to costs," he said.

Jackson was almost pawing the floor—"All right, then, you tell me! You're in charge of manufacturing. You tell me what happened to costs!"

"They went up," said Larson. "They went up because materials and labor went up, while sales

volume remained constant."

Jackson bellowed at that. He had, he told us at length, seen the company make money under difficulties before. Then he started down the table, firing indictments at each of us, without waiting for replies. On Joe Roscoe's bent head he heaped the total responsibility, and then he started parcelling portions. Manufacturing costs were on Larson, the low sales volume was the sales manager's fault, with an assist from the advertising man. The comptroller was raked for unrealistic budgeting. McPherson caught the blame for an uneasy labor situation. Engineering, design, research, all were attacked.

Near the end of the table, he came to me.

"You," he shouted, "I told you I wanted accidents stopped. Not just a three per cent cut—but something that shows results—results in compensation rates, in labor relations, in, blast you, the real fact that this plant is a safe place to work."

I took it then, just as the others had, without protest. I went back to my office with my tail between my legs. The progress I had made, which I had been proud of, looked like failure now. The gains that seemed so big were trivial. The losses that seemed so unavoidable now looked like criminal negligence.

It took Jackson a week to work down through the organization to me, closely questioning executives and specialists, step by step along the lines of the organization chart.

By the time he got to me, heads had rolled. Joe Roscoe's was the first. Immediately after he was fired, Jackson and Larson met in an angry session, both men roaring at each other, while the little secretary-gals listened in fear and rushed about carrying gossip on developments to the office in general.

In the middle of that fracas, Larson resigned. At the end of it, he was appointed president of the company. All that Lars ever said to me about that interview was,

"If I had to buy the presidency again at the price of another interview like that, I'd go back to running a machine in the shop."

The sales manager went down in the shakeup. The design head decided that his health required early retirement. The comptroller hung on, badly shaken. Doc Moller, head of research, was the only one I saw who didn't seem jarred by his session with Jackson. And even he, though he could still make a joke of it, said to me over lunch, "Dot man, he should haf been a Prussian. Dot little man with a bad heart and high blood pressure, he has more heart even than me. Almost, he can hurt me—and I am Doc Moller who thinks all the world is a big joke to be not seriously taken."

This morning it was my turn. On Jackson's desk were my latest reports. On his wall was a chart based on data in those reports. Jackson walked across to the chart, pointed at the red trend line of frequency—pointed at its wavering, slow decline.

"You bragged about that drop in your latest report," he snarled. "You know what I think of it? Here—" He slid his hand across the red line, and the ink smeared. It made a gory-looking mess of the chart. Then he turned his hand over. "That's what I think of it," he shouted. "Blood on my hands. Now, what's wrong, and what are you going to do about it, or do I get a new safety director?"

What I wanted to say, first of all, was that he had just taught me a trick for dramatizing accident statistics that I might borrow. But I decided that was an unwise approach.

On the other hand, the situation didn't call for humility. Joe Roscoe had been humble, and was out on his ear. Larson had fought back and he was president.

"If you've read those reports you know what I think we need," I said.

"I've read them," Jackson said.

I went on, "That's what I think we need—all of it that I think this



company has wanted. All that a back-slapping president who didn't know production would buy. All that a vice president in

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Observing magnitude of static electricity developed by person rising from metal chair. Electrodes are connected to the chair and to the person. Voltage developed is recorded on oscilloscope (left) and at the same time photographed by attached camera.

Controlling Static Electricity

ELECTROSTATICS, the study of the phenomena of electrically charged particles or bodies, is of fundamental importance to science. Electrostatic forces are also of increasing industrial importance. They have been applied to such processes as ore-separation and large-scale spray-painting. Painters, for instance, have found that a tremendous saving is achieved if the object to be painted is charged to several thousand volts.

In other industries, such as air conditioning, the manufacture of explosives, grain and flour storage, textiles, and printing, static electricity, under many circumstances, can be a distinct hazard. In a granary, for instance, the air is usually thick with fine flammable grain-dust particles. Grain sliding down a metal chute can result in an accumulation of static charge that, when it discharges in an electric spark, can easily ignite the fine dust particles and result in a disastrous fire.

For many years, the National Bureau of Standards has been consulted by other government agencies of problems arising from hazards associated with static electricity. To meet a growing demand

for this information, the Bureau is enlarging its research and standardization program, under the direction of F. L. Hermach, for establishing and evaluating methods of measurement and for determining the properties of materials and equipment used to reduce the hazard. The results of one important phase of the program, an investi-

gation of the conductivity of floor coverings, are being utilized to reduce static electricity hazards in hospitals currently under construction and in Federal munition plants.

Specifications for conductive floors and other equipment depend on a determination of the safe limiting resistance between objects.



Conductivity of a sample of terrazzo flooring is determined at National Bureau of Standards to determine protection offered by such flooring against hazards of static electricity. Sample is inserted into humidity chamber (right) and measuring circuit to a precision megohm bridge (left) is completed through a pair of metal electrodes placed at a predetermined distance apart on surface of sample.

NBS has participated in determining these limits, evaluating various safety factors, and devising suitable methods applicable to field as well as to laboratory testing of flooring and other materials, and is testing and evaluating various types of conductive floorings, coatings, and waxes. This work is conducted only for Federal and other government agencies.

A conductive floor need be only a moderately good conductor of static electricity; a resistance of one million ohms or less is ample. Such a flooring provides a safe path over which separated electrostatic charges may be reunited as quickly as they were separated. It is this natural inclination of the charges to rapidly reunite that causes the hazard, creates the spark, or provokes the shock.

To determine resistance characteristics of flooring, a sample is subjected to different voltages under varying conditions of humidity and temperature. The measuring procedure is also considered in the evaluation. Flooring resistance is measured with a special resistance-bridge as a function of pertinent variables such as voltage, humidity, and the type of electrode used in making the measurement. One test on a section of terrazzo flooring showed that for a variation of from 30 to 500 volts, resistance of the sample decreased from about 4.5 to 1.5 megohms. A low resistance flooring—conductive linoleum—changed from almost 3 megohms at 40 volts to less than 10,000 ohms at only 150 volts.

An accompanying phase of these experiments is a determination of the actual safe upper limit of resistance. For example, tests show that voltages as high as 5000 volts can be developed by such everyday occurrences as getting up from a plastic-covered chair. Oscillographic records, however, indicate that if the resistance between person and chair is less than 20 megohms, the voltages will not exceed 300 volts. This is less than the minimum sparking voltage in air and is not hazardous.

The magnitude of the electrostatic charges produced by separating objects depends on the material involved, their intimacy of contact, and their surface resistivities. However, many accidents do not arise from these direct effects but rather from the secondary effects resulting when the static electric charges are reunited. For instance, the electric shock experienced when a charged person touches a conducting object, while generally merely annoying, can cause serious damage if the person is precariously balanced on top of a ladder at the time he receives the minor shock. Also, the energies in electrostatic sparks may be large enough to ignite flammable gases or vapors that may be present in an enclosed room. Likewise, "precipitation static" caused by corona discharges from highly charged aircraft in flight has been found to be often responsible for serious interruptions to radio communications.

The most serious hazards, those of possible ignition of flammable gases or dusts, can best be mitigated by reducing the flammability or eliminating exposure to the flammable agent. This also reduces the hazard from other sources of ignition, such as arcs from the normal operation of electric equipment or the presence of hot bodies in the hazardous area. These measures, when coupled with exclusion from the area of materials such as

plastics, wool, and rubber, which have high electrical resistivity and "generate" high electrostatic charges, are often sufficient to reduce the hazard to a negligible value.

More elaborate methods of mitigation depend upon reuniting the charges as fast as they are separated in order to keep the voltage across the affected objects low. This can be accomplished by connecting stationary metallic objects to a common ground, by humidification (which provides a film of moisture of moderate conductivity on most objects), or by installing a conductive floor to provide electrical contact with the objects that move or rest upon it. The latter is generally considered the safest method where persons or moving objects may separate charges. Thus, in hospital operating rooms, for instance, the personnel normally wear shoes with conductive rubber soles, and floors are of conductive material. The separated charges developed in a person by walking, rising from a chair, or removing sheeting are then quickly reunited through the flooring before they can be transferred to another person or object.

In addition to the consultative and testing services to other government agencies, members of the NBS staff have also served on a number of committees that have been organized to formulate rules and procedures governing static electricity preventive practices. In 1942, the Bureau published a circular¹ that outlines the problems and suggests solutions that are as timely today as they were 10 years ago. The circular discusses the nature and the origin of the charges of static electricity arising in industrial processes, and explains the various methods of mitigating the hazards that they introduce. It also gives the quantitative basis for engineering treatment of the phenomena.

¹ NBS Circular 438, Static Electricity, available from the Superintendent of Documents, Washington 25, D. C., at 10 cents a copy.



Measurement of contact potential and internal resistivity of bar sample of flooring. Metal electrodes are connected to megohm bridge (left) and bridge reading indicates total resistance and current flowing in section of bar between electrodes.

Cause AND CURE

These examples, taken from actual cases, are presented for the use of people responsible for safety. It is believed that these, or similar cases experienced in the reader's own plant, can serve as a basis for safety discussion.

Tipped Truck



Three employees were moving a 4 foot by 8 foot hand truck loaded with 7,550 pounds of sheet iron into a storage area. The rear wheels of this truck are 2 feet from the end of the truck bed; the sheet iron was in 10-foot lengths extending 2 feet beyond the end of the truck bed, placing the center of the load one foot ahead of the rear wheels. Three of the men were pushing at the rear end of the truck, with one man on each side. There was a small pile of sheet iron on the floor approximately $\frac{3}{4}$ inch high, over which they endeavored to force their load by giving it a good start in order to get to a vacant space beyond.

The rear wheels of the truck, which were the first to strike the obstruction, did not go over. The momentum caused the banding on the sheet iron to break and all but the bottom sheet to slide to the rear of the truck so that the center of balance was past the rear wheels. The front end of the truck on which the men were pushing was elevated to the height of a man's face, and the force of the iron sliding off shot the truck and one man into a partition some 10 feet behind. The truck and the remaining sheet of iron struck another man in the face and chest. His nose and tongue were severely lacerated, and two ribs were fractured.

Correction: Three factors contributed to this accident and would require corrective action:

1. The truck wheels were installed too close to the center of gravity, providing excessive overhang of the bed. They should be moved closer to the end of the truck bed.

2. Hand trucks shouldn't be "horsed" over obstructions on the floor; the obstruction should be removed or the truck maneuvered around it.
3. Load binders should be used to keep the load from shifting—especially when heavy, bulky loads are involved.

As Dangerous as a Gun



A machine operator in a woodworking plant, covered with sawdust at the end of the day, decided to clean himself off with compressed air. He held the nozzle 12 inches from the palm of his left hand.

When he opened the nozzle, the air, under 80 pounds of pressure, struck and entered the hand, and, before he realized what had happened, his arm had been blown up "as big as a grapefruit" and was shooting with pain from the fingertips to the shoulder. The most excruciating pain was in the head, the feeling being as though the top of the head was about to be blown off. This feeling was so real and the pain so intense that, when help reached the young man, he was actually endeavoring to hold the top of his head in place.

And the plant surgeon says it could have been worse. Had the air forced its way into the blood stream, it would have made its way to the very small blood vessels of the brain, there causing a clot, which would have burst the vessels and caused death.

Correction: The moral is obvious. A compressed air hose is as dangerous as a gun—and a gun is nothing to clean your clothes with, or use in horse play with other employees.

The SAFETY VALVE

Midsummer Musings

EVERY TIME the electricity is off, whether from a storm or just a blown fuse, I'm reminded how much we depend on it and how vulnerable our electrified civilization would be to enemy attack.

Most recent reminder was at Pikeville, Tenn., on this year's vacation. We had just stopped in the drug store when the threatened storm broke. Lightning knocked out some vital part of the distribution system. The light fixtures sparked and went out. The game at the pin ball machine was halted. The air conditioning unit died. The malted milk mixer stopped. The druggist couldn't even operate the cash register.

Outside, the water poured down the street, overflowing the curbs. We were wondering whether current had been cut off up on the hilltop, which meant the difference between steak and beans for supper. Fortunately TVA was still on the job up there.

* * *

You don't have to be very old to remember the rigors of a summer rail trip before the days of air conditioning. I haven't forgotten an August night in 1923 when I baked in a berth in the Detroit station from 10 o'clock until the train pulled out around midnight.

Air conditioning is wonderful but it does go haywire at times. And when it does, it's worse than the hot blasts of air and cinders that used to come in through open windows (when you could get them opened).

Getting on the G. M. & O.'s luxurious streamliner, *The Abraham Lincoln*, in the superheated station at St. Louis, it looked like solid comfort from there to Chicago after a rough night on a slow train

through Arkansas and Missouri.

Seats and temperature were comfortable. Washrooms were roomy, well-equipped and clean. Most unusual, the doors between coaches could be opened without superhuman effort. My wife and I had an excellent breakfast at moderate cost and were looking forward to lunch. Eating, after all, is one of the pleasures of traveling.

So, when we began to feel hungry we headed back to the diner. We passed through a coach in which the air conditioning had died and people were gasping. Same in the diner, which was crowded. We decided we could wait till we got to Chicago.

You can get along without modern conveniences on the farm or on a hunting trip. But you can certainly suffer when they are suddenly withdrawn in the midst of a routine geared to them.

* * *

Vacations are a great institution. If they didn't do anything but make you satisfied with home, they'd still be worth while. After living out of a suitcase for two weeks I can sympathize with the Wandering Jew. And even after the scenery of the Smokies and the Ozarks, my lush green lawn looked good—dandelions, plantains and all.

* * *

From the rectory at Roundup, Mont., comes a note from Bill Andrews, former NSC editorial director and now lay missionary at Calvary Episcopal Church, and postulant for the priesthood.

Bill and his family are happy in their new home. At the time of writing he had conducted his first service, held the first vestry meeting and was preparing to preach his first sermon. I'm glad

the bishop is allowing him to preach. He has much to give his congregation.

Bill, incidentally, is the second member of the NSC staff to feel the call. John S. Cuthbert, formerly of the New York office, was recently ordained a deacon.

Those who have been following *The Diary of a Safety Engineer* will be glad to learn that Bill will continue this popular feature.

* * *

Having read the Council's forecasts about traffic accidents over the Memorial Day week end, I was a bit apprehensive about the vacation trip. But traffic on Route 64 from Memphis to Cleveland, Tenn., on Saturday was the lightest I've ever seen on a major highway. Shiloh National Park was almost deserted. And in 1800 miles of highway travel I didn't see a car in the ditch.

In This Issue . . .

THE PRESIDENT'S CONFERENCE ON INDUSTRIAL SAFETY occupies a prominent place this month. In addition to the on-the-spot report of the Conference by our representative, Kent Francis, (page 21), two outstanding addresses are included. In "Safety is Good Business," H. W. Anderson draws on the experience of General Motors for some convincing data on the economic value of accident prevention. (Page 20). The Public Relations side of resultful safety programs is described by J. Carlisle MacDonald of United States Steel. (Page 33)

* * *

More and more attention is being paid to keeping the objectionable by-products of manufacturing processes from contaminating the surrounding air. Hamnett P. Munger of Battelle Memorial Institute discusses the extent of the problem and methods of control. (Page 22)

Carman Fish

Safety Helps Public Relations

By J. CARLISLE MacDONALD

A Good Safety Program Goes a Long Way Toward Winning Public Respect and Confidence for Your Plant

IF A FIRM has a dynamic, effective safety program, it will become known to its employees and neighbors in the plant community as a good place to work. Certainly, this reputation is an essential factor in winning public respect and confidence.

Here are two activities that do more than simply complement each other. Safety, in my opinion, is the cornerstone of good public relations.

More and more, American industry is coming to the belief that a company's standing with its public nationally is determined largely by the place it holds in the regard of the people who live in the cities, towns and villages where it operates. In other words, it is judged by its spirit of neighborliness.

This concept of public relations and safety revolves around the decisions and policies of management. Over the past two decades there has been a growing awareness that public confidence in and appreciation of an organization stem from the policies and deeds of the organization. So, I should like to talk about safety, not as a matter of engineering, of rules, or of training, but as a facet of management policy which helps to merit public confidence and support.

In our industry we take pride

J. CARLISLE MacDONALD is Assistant to the Chairman of the Board, United States Steel Corp. This article has been adapted from a talk prepared by Mr. MacDonald and presented before the President's Safety Conference in Washington, D. C., June 3, 1952, by E. C. Logelin, Director of Public Relations, United States Steel Corp., Chicago.

in the fact that it was steel which first made both safety and public relations the concern of top management. During the thirty-five years from the end of the Civil War until the turn of the century, when America was flexing her industrial muscles, with factories and railroads moving ever westward, little concern was given to either subject. Both top management and employees were inclined to agree with Dickens that "accidents will happen in the best regulated families." When it came to reporting to stockholders and the public, much the same spirit prevailed. The unwritten rule had been that the best financial report was one that said the least.

Judge Gary, first Chairman of the Board of United States Steel, was the pioneer who changed management attitudes toward both important functions. In the famous set of Gary principles, he said, "I believe that no industry can permanently succeed that does not treat its employees equitably and humanely," and later, "I believe thoroughly in publicity . . . the surest and wisest of all regulations is public opinion."

In 1902 when United States Steel Corporation issued its first Annual Report, Judge Gary applied these principles to the corporation's business. He believed that the stockholders were entitled to all the facts about the business. More than that, he set out to present the facts in such a manner that they could be easily understood. One by one, other great corporations began to follow this pattern, and a new era in financial reporting dawned.

Similarly, a few years later, Judge Gary pioneered in safety.

He organized a department of safety, sanitation and welfare in 1906. In 1908 he said, "We should like to take a prominent part, a leading part, in any movement and in every movement that is calculated to protect employees of the different corporations in which we are interested, and any requisition which is made for the expenditure of money to install equipment to protect our people will be honored."

By his actions, Judge Gary set the Corporation, and the steel industry, on the path of neighborliness—of helping its fellow men.

The cynic might maintain that the safety movement was not a voluntary action on the part of industry. "It came," he might say, "as a defensive measure inspired by the passage of workmen's compensation laws." But U. S. Steel's safety efforts go back to 1890 when H. C. Frick Coke Company inaugurated the slogan that "the safety of the lives of our employees is our first and foremost important business." Judge Gary began talking safety shortly after United States Steel was formed and years before there were any workmen's compensation laws.

One other fact is worth noting. United States Steel Corporation voluntarily adopted a compensation relief plan for injured employees in 1910 before a single state of the union had passed a workmen's compensation act. This plan served as a model for a number of states in drawing up liability legislation and for many years was more liberal in some respects than the plans of most, if not all, states.

In 1919, an estimate was made

that from the inception of U. S. Steel's safety program in 1906 until 1919, 25,853 people had been saved from serious injury by this program. Progress since that time has, if anything, accelerated so that between 1912 and 1951 the combined accident frequency rate for operations of U. S. Steel was reduced 92 per cent.

This is just the record of one large company in a large industry. It is paralleled by the accomplishments of a great number of other large companies. Your own conference report in 1950 showed that so-called "big business" has achieved a much lower accident rate than small companies, and that "the greatest accident prevention problems exist in the smaller plants, specifically in those having fewer than 500 employees."

And so we may well ask what big business has done and is doing to be neighborly to small business in this field—to help small companies in working out their accident prevention programs. The record is a good one, of sincere and intelligent help—real service!

We in United States Steel are interested in the progress and growth of small business. The same interest exists, I am sure, on the part of other large companies.

Probably the first great contribution of large industry to the safety campaigns of small companies was made in 1913, when the National Safety Council was organized. Here in one organization was the pooled experience of leaders in the safety movement, made available for the use of all business, large and small, as well as the general public.

Again, in this milestone of safety, it was a steel group, the Association of Iron and Steel Engineers, which took the lead in extending this service to America. It was these engineers who called the first safety congress. From this early step have come studies, surveys, statistics and programs, which spread the gospel of safety from industry to the home, highway and community.

But big companies have done

Siamese Official Visits NSC



Looking over a Safetygraph at National Safety Council offices are Charles F. Alexander, manager, Industrial Department, NSC; Se-ard Mejudhon, director, Factory Control Division, Siamese Ministry of Labor, and Major C. B. Cannon, Educational Unit, Division of Factory Inspection, Illinois Department of Labor.

SE-ARD MEJUDHON, director of the Factory Control Division, Ministry of Industry, Bangkok, Siam, was a recent visitor at National Safety Council headquarters.

Mr. Mejudhon, who holds the degree of B.S. in M.E. from Purdue University, 1936, arrived in Washington in February for a four months tour of industrial centers of the U. S. A. to study methods of formulating and enforcing safety and health regulations.

In Siam the Factory Control Division has as its principal functions the zoning of industrial areas, defining qualifications for skilled workers and supervisors, and establishing and enforcing of industrial safety and health regulations. His trip was arranged under the U. S. Department of State's program for exchange of personnel and the itinerary was planned by the Office of International Affairs of the U. S. Department of Labor.

more than this. They have made the results of their research and experience available to customers, suppliers, subcontractors and other small companies.

For a specific example, let me tell you about a program, known as "Single Objective Safety," begun by one U. S. Steel division three years ago. In our plants where it was used during these three years, there has been a reduction of 35 per cent in the frequency rate of lost-time accidents and 45 per cent in the frequency rate of all accidents.

Did our safety men clasp this program close to their chests, like a tightly held trade secret? Of course not! Through booklets and addresses before other groups, they have made it available to thousands of firms and associations.

Safety, however, is a never-ending job, and already our safety men are training supervisors for another campaign — this one is known as the "3 C's of Safety."

We hope it will prove equally
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President's Conference

(From page 21)

and Chairman of the Conference Coordinating Committee, explained that the Conference purpose was "First, to assess four years of progress; second, to appraise our unfinished business . . . and third, to be different. I see this Conference as a continuing stimulus of state action through Governor's Conferences. I see this Conference as a stimulus for further action by management, labor, educators, private safety organizations and all groups with the responsibility for saving human lives in industry."

Further, to make the objectives of the session clear, Vincent P. Ahearn, who directed the Conference, said: "The President's Conference is not concerned with legislation, nor is its interest limited to industry in terms of manufacturing industry only. Furthermore, the Conference assumes that safety is management's business and management's responsibility."

One note of exception to this concept of non-coercive solutions to the industrial accident problem was struck by President Truman in his opening speech. He mentioned legislation, already passed by the Senate, which would, in the President's words "... authorize the Department of the Interior to enforce compliance with federal standards of mine safety. It (the Bureau) has only the power of persuasion. That power is not enough, as events have proven conclusively. . . . It is clear that the coal miners and their families must have better protection, and they are entitled to look to their government to see that they get it."

Although this statement by the President, which was but two paragraphs long, dominated the news coverage on the President's speech the following day, the President's emphasis was distinctly on the voluntary aspects of

accident prevention control. In his concluding remarks, he offered the following eight-point program:

1. Accident reporting and analysis should be improved. Not enough people understand the importance of careful, complete reporting and analysis of accidents.

2. Manufacturers of machines should install better guards on the machines. Manufacturers will build the kind of machinery people will buy. If we can persuade the consumer to buy machines designed with safeguards, a tremendous advance can be made on the road toward industrial safety.

3. Schools, colleges and plants should emphasize safety education.

4. Every company should have an organized safety program. This

is the very heart of accident prevention.

5. Workers should participate more extensively in safety measures. Vigilance and care on the part of the worker are essential to safety. Labor unions should see to it that they and their members participate in safety training and safety promotion.

6. State safety codes should be modernized and made uniform. It is highly encouraging that so many states are overhauling their codes and adding new ones.

7. Public employees should have better safety programs. Federal departments and agencies are going to organize field safety councils. The states also should take measures to improve safety programs for their employees.

8. There must be better public understanding and support of accident prevention. We have not succeeded in indoctrinating enough of our people in safe methods of work. It was at 11 o'clock on the Monday morning of the Con-



Receiving special awards of merit at the President's Conference were (left to right): Dr. William P. Yant, Mine Safety Appliances Co., Pittsburgh, Pa., chairman, Research Committee; Fred W. Braun, Employers Mutual Liability Insurance Co., Wausau, Wis., chairman, Programs and Services Committee; Dean S. S. Steinberg, University of Maryland, College Park, Md., chairman, Education Committee; Harold C. Zulauf, Alexander Smith and Sons Carpet Co., Yonkers, N. Y., chairman, Labor-Management Cooperation for Safety Committee; Dean C. W. Beese, Purdue University, Lafayette, Ind., chairman, Educational Committee; Vincent P. Ahearn, National Sand and Gravel Association, Washington, D. C., executive director, President's Conference on Industrial Safety; Secretary of Labor Maurice J. Tobin; John J. Del Monte, Commissioner of Labor, Boston, Mass., chairman, Laws and Regulations Committee; Ralph T. Seward, attorney, Washington, D. C., chairman, Labor-Management Cooperation for Safety Committee; Sidney J. Williams, National Safety Council, special consultant to the executive director; Ewan Clague, U. S. Dept. of Labor, Washington, D. C., chairman, Accident Records, Analysis and Use Committee; Dr. Phillip Taft, Brown University, Providence, R. I., chairman, Educational Committee; Charles F. Alexander, National Safety Council, special consultant to the executive director; Henry G. Lamb, representing Cyril Ainsworth, American Standards Association, N. Y., chairman, Programs and Services Committee.

announced its decision in the steel fence that the Supreme Court mill seizure case. In consequence, tall, personable Secretary of Labor Maurice Tobin changed places with Ned H. Dearborn, President of the National Safety Council, at the afternoon session. As Mr. Ahearn said from the platform, "The Secretary is delayed by matters of some importance"—the understatement of the Conference.

Secretary Tobin, whose voice is amazingly like Raymond Massey's, gave the delegates a comprehensive summary report on the results of the three previous President's Conferences. The Secretary reported that 18 states, the District of Columbia and Hawaii have held one or more Governor's Conferences—24 in all. According to information available to the Labor Department, a total of 32 states and territories now hold Governor's or other conferences, which periodically review job safety problems and chart further requirements.

The Secretary pointed out that, as a result of the work of the Laws and Regulations Committee of the Conference, laws affecting basic safety standards, aside from mines, were enacted in 26 states and territories, and that a total of 111 safety codes has been issued, amended or revised. "This," said the Secretary, "shows the determination of management, labor and the States themselves to keep worker safeguards abreast of technological changes in industry."

The focal point of the two and one-half days of deliberation and discussion was safety of the employee in the small plant. With the exception, perhaps, of a secondary emphasis on public employee safety, the problem of small business dominated the entire Conference. Even the two representatives of big industry—Harry Anderson, of General Motors, and J. Carlisle MacDonald, of the United States Steel Corporation—underscored the need for safety in the smaller business by the very success in safety reported for their

Quotable Quotes from Speakers at the President's Conference on Industrial Safety

"One of the noblest purposes of mankind is the saving of human life. But attention to this purpose now has an additional incentive—the importance of conserving the skills of the nation for the needs of defense production." . . . Truman.

"This is a political election year. I believe we should remind ourselves that the safety of workers in industry has no relationship to political party or philosophy. Election years have come and have gone, but our sustained interest in saving lives and preventing accidents goes on forever." . . . Tobin.

"Good discipline means order and a decent respect for the rights of others. Employees like to work in a plant where there is order and good discipline. Good discipline is one evidence of good management, and you can't have good discipline in other respects unless you have good discipline in the observance of safe practices." . . . MacDonald.

"If a firm has a dynamic, effective safety program, it will become known to its employees and the neighbors in the plant community as a good place to work." . . . MacDonald.

"The absence of organized and effective safety and industrial hygiene work in public employment is regrettable. It is more than that. It is a weakening factor in the attempt of government to persuade private industry to put its house in order." . . . Bowman.

"The men and women who work for most of the municipalities in this country—as well as for most of the State Highway Departments—are working under conditions as hazardous as those prevailing in private industry a half century ago." . . . Bowman.

"That the small employer has not met his obligation to his employees in the field of safety with as great success as we think he should is less an indictment of him than it is of us." . . . Dearborn.

"The error we may have made in the past may well be the error of thinking of the big plant man and the small plant man as two different kinds of men, instead of the same kind of man in need of different approaches to the same kind of problem." . . . Dearborn.

"Constructive legislation inevitably reaches a point of diminishing return, and must be replaced by punitive legislation. That is, if legislation is to be the chief solution to the injury problem in small plants. We cannot legislate attitudes and points of view, either the employers' or the employees', and, therefore, that large residue of injury causes remains forever beyond the reach of any remedy except a voluntary one." . . . Dearborn.

"The association which upgrades its members' work in accident prevention upgrades its entire performance as a production or service unit." . . . Dearborn.

"You can't negotiate a man's life. Nobody should be on a labor-management safety committee who has anything to do with the enforcement of the contract." . . . Connolly.

"We don't think management, or labor, or government can do the safety job. If we look to legislation, it is because we have to. We want a chance to participate. We are going to get it." . . . Read.

"I speak with militant humility when I say that there is too much talk about management and industry, too much talk about labor and industry. Labor and management are industry." . . . Shiskin.

own tremendous enterprises. It was abundantly clear at this Conference that the practice of accident prevention, as of now, is largely in the hands of large employers—municipal and state governments excluded—and that the question of the moment is: Can the little employer control the job hazards of his employees, and will he do so without being forced to?

The theme was keyed by Mr. Dearborn of the National Safety Council, whose address on Monday afternoon dealt with small business safety. Mr. Dearborn's talk,

plainly and without qualification, threw the spotlight on the small plant, and on the associations as the avenues by which the small plant must be reached.

Confessing failure, at least on the part of the National Safety Council, to touch the interest of the small employer by more conventional means, Mr. Dearborn called for a realistic approach by way of those organizations which already have some hold on the interest and confidence of the small employer.

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Small Businesses and Associations

By A. M. BALTZER

Director, Small Business and
Associations Program, NSC

More Conferences Help Small Business

The *Maryland Governor's Safety Conference* drew almost 200 persons to a meeting featuring safety in small business. Paul Grundman of Armco Steel, Baltimore, made the arrangements for us to appear on the program. Paul is past general chairman of the Metals Section and a very active member of that Section's Trade Association Liaison Committee. The Metals Section is firmly sold on the need for voluntary control of accidents in small business and is "practicing what they preach."

The *American Association of Oil Well Drilling Contractors* held their annual safety clinic at Dallas on May 19. They need little "converting" as their program is quite complete and has cut their accident frequency virtually in half within the past five years. However, their current rate of 40 disabling injuries per million man hours is still far from satisfactory to them and they intend to cut it down as rapidly as they can through more safety meetings, technical publications, contests.

The *Pennsylvania Manufacturers Association* and the *Montgomery County Manufacturers Association* were instrumental in setting up a special small business session at the *Pennsylvania Industrial Safety Conference* in Harrisburg May 20. John Seeton of the P.M.A. and Bob Scott of our Small Business Committee did the honors and are continuing to sell their associations and members on the benefits of participation in the Council's program.

Our *Printing and Publishing Section* may have started something by scheduling a full day's

safety conference for New York printers and New York printing associations in connection with their Executive Committee meeting in New York May 22 and 23. The 10 speakers covered subjects ranging from promotional to technical and certainly contributed to the background of information for the industry. The manuscripts will be reproduced and made available to the industry in much the same way as the Congress Transactions.

Incidentally, the *Printing Industry of America, Inc.*, and other associations are cooperating in a promotional campaign to sell the dozens of associations in the graphic arts industry on setting up safety programs. They are also urging special industry associations to take out membership in the Council and to start industry-wide safety programs.

The *President's Conference* highlight, at least as far as we are concerned, was Mr. Dearborn's keynote talk which was built around the small business accident problem.

Coming Clean with Safety

The laundry industry is typical of the non-manufacturing type of small businesses that we are trying to reach. It is encouraging that several associations are interested in the proposal to set up a new committee and possibly a Section of the Council. The *American Institute of Laundering*, the *Laundry and Dry Cleaning Association of Washington*, the *National Institute of Cleaning and Dyeing*, *Laundry & Dry Cleaners Allied Trades*, the *Linen Supply Association*, the *Pennsylvania Association of Dyers and Cleaners* and a

couple of others have considered some type of safety program. Your reporter also addressed a typical group in this field — the *Institutional Laundry Managers* at the Tri-State Hospital Assembly in Chicago April 29 and spent a day at their laundry and discussed training courses at the *American Institute of Laundering*, Joliet, Ill.

Safety Aids Public Relations

The *American Gas Association* "Monthly" for March 1952 contains a feature article describing the AGA safety program.

AGA Vice President, Charles E. Bennett, said in part "One of the most, if not the most, important problem before the gas industry is restoration of the confidence of the public in the safety of our product, our operations and our appliances and equipment."

It is significant that the new program will include, wherever practical, at least one talk on safety at each Association meeting. Safety will be a prominent theme in the AGA public relations program. All available films on gas safety will be added to the Circulating Film Library of the AGA. A new safety consultant will specialize on company employee safety problems, and a newly appointed Executive Safety Committee will formulate policy.

Hospital Program Expands

This Spring the *American Hospital Association* held its first Safety Institute in Boston. More than 80 administrators attended the two-day sessions which tackled safety problems involving nurses, patients and special departmental hazards.

The *Massachusetts Hospital Association* broadcast a suggestion that its members set up safety committees. As of March, 70 Massachusetts hospitals reported they would do so.

The *Ohio Hospital Association* is turning out a remarkably fine series of releases on safety and fire prevention which are sent out at two-week intervals to its entire membership.

Reasons Why

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Fire Tests of Escalator Shutters



Fire shutter for moving stairway, mounted at the top of a test furnace at the National Bureau of Standards. The iron pipes (right foreground) contain thermocouples for measurement of temperatures in the furnace when a flame is applied to the underside of the shutter.

UNPROTECTED ESCALATOR openings in department stores and other large, multistoried buildings may allow a fire to spread with great rapidity. To reduce this type of hazard, the Building Exits Code of the National Fire Protection Association recommends that each moving stairway above street level be equipped with a rolling shutter that will automatically close the top of the stairway when fire or smoke is detected in its vicinity.

Automatic shutters of this kind have been installed in many buildings, but definite information on their effectiveness has been lacking. Recently N. D. Mitchell, E. W. Bender, and J. V. Ryan of the National Bureau of Standards completed fire tests¹ of escalator shutters submitted by manufacturers, providing information of interest to architects and builders,

as well as regulatory bodies concerned with specifications or building-code requirements.

In general, the shutters tested consist of galvanized slats which travel on rollers in steel guide rails. Automatic closure may be obtained by any standard fire- or smoke-sensitive system.

Three fire tests were made: an exploratory test to determine the adequacy of the shutter and guides alone, and two full-scale tests in which the supporting frames and runways were used. The shutters were installed over a floor-test furnace, and fires were applied to the underside of the installation. Temperatures were measured by means of chromel-alumel thermocouples protected by porcelain insulators and encased in wrought-iron pipes sealed at one end. The furnace temperature was raised to 1700°F in one hour, and to 1925°F in

three hours in accordance with the ASA standard method for fire tests. The tests were discontinued at the end of three hours.

In each of the tests the shutters sagged, the guides were somewhat deformed, and the rollers were damaged by burning and loss of lubrication. However, as the fire did not spread up through the shutters, they were considered to have successfully performed their function. Retraction after the fire was difficult, but this did not affect the main function of the shutter. As a result of the tests, design changes have been recommended, particularly to allow for thermal expansion in the guide rails.

¹For further details, see *Fire Resistance of Shutters for Moving-Stairway Openings*, by Nolan D. Mitchell, Edward W. Bender, and James V. Ryan, NBS Building Materials and Structures Report 129, available from U. S. Government Printing Office, Washington 25, D. C., at a cost of 10 cents.

Home Safety Merit Awards

THE HOME SAFETY CONFERENCE of NSC invites all organizations and agencies—national, state, or local—as well as all business or industrial companies which have conducted regular programs or single projects in home accident prevention during the year ending June 30, 1952, to report these activities for a National Home Safety Merit Award.

These annual awards are not competitive. Their purpose is to honor exceptional public service in this field, and each entry is considered on its own merits only. If your group or institution did anything to reduce home accidents from July 1 last year to June 30, 1952, on behalf of your members, employees, or others—through education or otherwise—you may win a Home Safety Merit Award this year. Applications on the official blank, now available upon request to the Council's Home Division, must reach the Council office by August, 1952. Write for your questionnaire today.

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Slug Casting Machines

Published by National Safety Council
425 North Michigan Avenue, Chicago

1. There are two basic types of slug casting machines — the keyboard machine and the hand-set machine. Only the hazards resulting from the use of hot lead are common to both.

Lead

2. It is essential that the temperature of the molten metal used in slug casting machines be maintained with the range of 530-545°F, both to ensure a perfect slug face and to minimize the danger of lead poisoning. At about 800°F the surface of the molten type metal oxidizes and when the machine casts or when the dross is otherwise agitated, lead dust flies about. At higher temperatures, not only does the rate of oxidation increase but lead fumes are given off, creating an additional hazard. For these reasons melting pot temperature should be closely controlled.

3. Most pots are fitted with thermostatic controls, but since these may get out of adjustment, a thermometer should be used to check the metal temperature. Another reasonably accurate test is to hold a piece of white paper in the molten metal for 10 to 15 seconds. If the temperature is just right the paper will char to a tobacco brown. A look at the slug is also a good indication of metal temperature.

This Data Sheet is one of a series published by National Safety Council. It is a compilation of experience from many sources. It should not be assumed that it includes every acceptable procedure in its field. It must not be confused with American Standard Safety codes, federal laws, insurance requirements, state laws, rules and regulations, and municipal ordinances. Reprints of Data Sheets are available from the National Safety Council.

4. Proper metal temperature, however, is only one safeguard against the lead hazard. Lead dust which arises from carelessly handled dross, whiskers, and rejected slugs can produce lead poisoning when breathed. Lead dust can be controlled by enclosing melting pots (figure 2), providing exhaust ventilation, and maintaining good housekeeping.

5. The large pots for remelting slugs should be completely en-

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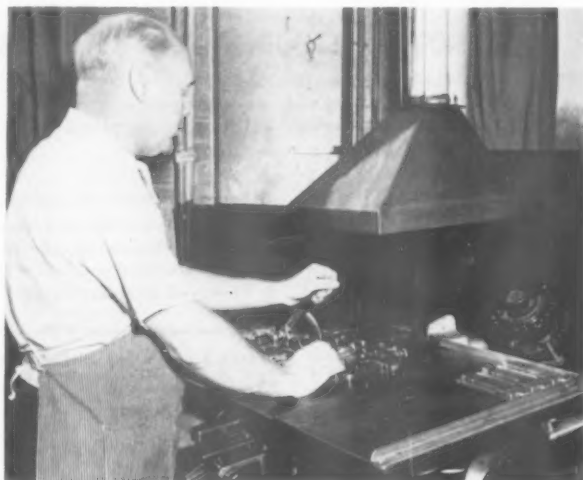


Fig. 1. Exhaust hood on Ludlow casting machine. (Courtesy Pullman Press.)

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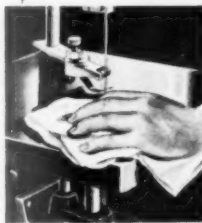


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Slug Casting Machines

(From page 46)

closed and ventilated. Figure 2 shows the method used in some organizations. A sliding door is fitted to the hood to provide access to the surface of the molten metal. The hopper which discharges into the dross drum opens into the hood so that the entire drossing operation is enclosed.

6. Plungers should be cleaned regularly over a down-draft ventilator, to prevent dust from scattering. A buffer or wire brush should be used, and the employee should wear an approved respirator. See figure 3.

7. The area around the slug casting machine and metal pot should be vacuum cleaned regularly. Walls, ceilings, beams, machines, etc., in the lead work room should be vacuum cleaned periodically to remove lead dust, too.

8. Dross, collected dust, and scrap lead should be kept in tight-

ly covered containers. Machines should be provided with racks or bins to catch rejects and slug trim. Janitors and maintenance personnel should be provided with gloves for cleaning up around machines and for disposing of waste metal.

9. Slug casting machine operators and melting pot attendants should be instructed in the importance of personal hygiene to prevent lead poisoning. Workers should change clothes and bathe at the end of each shift. They should launder their work clothes frequently. They should wash before eating. Food, drink, and tobacco even in containers should not be permitted in work rooms where lead is handled, because they absorb lead fumes.

Fire and Explosion

10. Those melting pots heated by gas, kerosene, or gasoline present several additional hazards.



Fig. 2. Remelting pot completely enclosed and ventilated. Note employees wearing respirators. (Courtesy U. S. Government Printing Office.)



Fig. 3. Home-made machine for cleaning casting machine plungers. Household-type vacuum cleaner provides exhaust. Monotype plungers can be safely cleaned by immersing in heavy oil before brushing; the oil eliminates dust and the need for down draft ventilator or other type of exhaust. (Courtesy U. S. Government Printing Office.)

Imperfectly adjusted burners may result in incomplete combustion and produce carbon monoxide. Sudden drafts may extinguish the melting pot mouthpiece flame and unless the fuel supply is shut off automatically an explosion or fire hazard may result. Therefore the ventilating system which takes care of exhaust fumes, although it should produce a strong and positive circulation, should not endanger either the mouthpiece or the melting pot flame.

11. Extreme care must be taken to keep moisture out of the melting pot to prevent steam explosions. The metal used should be dry and warm enough to be free from condensation. The melting pot should be shielded from above so water from leaky pipes or overhead sprinklers cannot come in contact with the molten metal. If local regulations permit, sprinkler heads can be removed from the casting machine areas as a safeguard against steam explosions.

12. Extreme care must be taken to prevent spilling while lubricating slug casting machines or while filling their fuel reservoirs. The heating element of the melting pot always presents a source of ignition for flammable vapors and liquids.

—To page 106

keep all walkways slip-resistant with



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Green Cross News . . .

Activities of Local Safety Councils and Chapters

Compiled by **TOM A. BURKE**

Director of Local Safety Programs, Field Organization, NSC

Institute for Managers Chicago, Aug. 4-5

The National Institute for Safety Council Administration will be held in Chicago August 4-15 at National Safety Council headquarters, 425 North Michigan. The Institute, which is tuition free, will be offered primarily for new managers and assistant managers of chapters. It will be sponsored by the National Safety Council, following recommendations from the Conference of Local Safety Organizations.

The purpose is to provide new and prospective managers with knowledge and techniques necessary for successful chapter management. Instructors will be members of the staff of the National Safety Council, experienced chapter managers, and nationally recognized experts drawn from organizations and agencies operating in related fields.

The Institute is planned as a workshop in which students will participate fully. It will not be merely a series of lectures. In addition to group discussion, opportunities will be provided for individual conferences. The Institute will be geared to practical consideration of the problems of the manager in organizing, financing, and conducting the program of the safety council. Attention will be given to all phases of the manager's job. Graduation certificates will be awarded.

Green Cross Campaigns

The Greater Cleveland Safety Council and the Eastbay Chapter, NSC, Oakland, Calif., report fine response from the public in their respective annual Green Cross financial campaigns conducted dur-

ing May and June. Excellent support by press, radio, outdoor advertising and other media has been accorded in each city and adjoining areas. The newspapers not only featured the campaign organization and progress as news but also built up interest in each metropolitan area through cartoons and editorials urging support.

25th Anniversary

The 25th Annual Eastern Pennsylvania Safety Conference, sponsored by the Lehigh Valley Safety Council, (Bethlehem) and cooperating organizations, was held at Easton, Pa., May 6-7. More than 500 attended the interesting sessions which included excellent programs in the fields of industrial, traffic and home safety. Harry N. Crowder, Jr., electrical contractor of the Easton-Allentown area was elected to the presidency of the Council, succeeding George A. Steel. Harry C. Woods was re-elected secretary-treasurer.

Circus Signs for Safety

Manager Bob Moderhak of the Chemung County Safety Council, Elmira, N. Y., has arranged for the sponsorship of the Ringling Brothers Circus in Elmira on July 15, a part of the proceeds to go to the Council and each ticket purchaser to get a membership in the organization. The Council recently conducted a Traffic Accident Investigation School for the various police units throughout the country. The school is under the supervision of the New York State Division of Safety. The object is to inaugurate a uniform method of investigating and reporting traffic accidents.

Big League Game for Safety

The fifth annual big league baseball game for the benefit of the child safety program of the Western Pennsylvania Safety Council, will be played Monday evening, July 21 at Forbes Field, Pittsburgh. The participants will be the Pittsburgh Pirates and the Detroit Tigers. Previous games brought the Philadelphia and Boston American League teams as Pirate opponents. The project is sponsored each year by the Pittsburgh *Sun-Telegraph* and the Safety Council. According to Manager Harry H. Brainerd proceeds will be used to continue the Green Pennant program, the Safety Patrol picnic, the Safety Patrol Training Camp and other school projects.

Industrial Progress

Since organizing the Industrial Division of the Greater Cincinnati Safety Council during the past year, 243 plants in the area are now participating in the Council's industrial contest and sending in monthly reports. The contest year ends June 30, which makes it possible to present awards to the winners at the Annual Greater Cincinnati Safety Conference in early fall. The Industrial Division has also arranged to present NSC industrial awards made to NSC members in the Cincinnati area and will help in the promotion of local ceremonies.

New Seattle Manager

Paul W. Seibert, for the past several years public relations director of the Municipal League of Seattle and King County, has taken over his new duties as managing

director of the Seattle Safety Council. He replaced Carl Lowe who resigned recently to accept a post with the Federal Civil Defense organization. Seibert comes to the Council highly recommended as an experienced, able administrator with a fine background in association work, finance and promotion. For some time he has conducted a popular radio program "Around the Cracker Barrel" over Seattle station KOMO. He was also editor of the *Municipal News*, the League's house organ.

Council Changes Policy

The Arkansas Safety Council, which has been supported by state funds since its organization a few years ago, will operate in the future as an independent agency, according to a recent announcement by Dr. Matt L. Ellis, president of the Council. Temporary headquarters have been set up in Room 307, Union Life Building, Little Rock. Secretary Harvey D. Booth reports that a statewide fund raising campaign is under way.

Reports that Sell Memberships

Interesting annual reports that tell stories of real accomplishment by Safety Councils and are attractively designed for strong appeal to potential members, have been distributed recently by the Western Pennsylvania Safety Council, Pittsburgh; Delaware Safety Council; the San Francisco Chapter, NSC; the Hamilton Safety Council, Hamilton, O., and the Lehigh Valley Safety Council, Bethlehem, Pa.

Philippine Safety Week

The Philippine Safety Council recently sponsored a "National Safety Week," according to the *Manila Bulletin*. Cooperating agencies include the Philippine Red Cross, boy and girl scouts, traffic police units, insurance groups, Rotary, Lions, Jaycees, Women's clubs and PTA groups. A presidential proclamation issued in early April officially announced the observance.

Educators Invited

Council and Chapter managers are urged to encourage their top school administrators to attend the Safety Congress in Chicago in



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October, particularly superintendents, school safety supervisors and members of school boards. The splendid programs prepared by the School and College Conference will be of great interest to all educational leaders. Very often a little urging by local council leaders will hasten favorable action on the part of the school authorities.

County Council Formed

First steps in the organization of the Tompkins County Safety Council were taken in Ithaca, N. Y., recently at a meeting attended by 100 representative citizens of the area. Ralph W. Jones of the Ithaca Public Schools presided. Five officers and a temporary board of 22 directors were chosen. The president is to be selected at the second meeting of the board, when it is planned to increase the membership so all sections of the county will be represented. The new Council has strong support from Cornell University faculty leaders.

Open House at Eastman

Eastman Kodak employees and their families were guests at an "open house" recently held at the Rochester, N. Y., plant. Thousands of visitors attended the observance which featured a colorful pageant. Many interesting exhibits were on display and safety came in for fitting emphasis. The Eastman plant was one of the pioneers in industrial safety in the United States.

The Whole Man

—From page 27

cal problem of safety in a psychological manner, he will have to do two things:

1. Keep management conscious of its responsibility for the safe welfare of the employees of the company. Above all other things which the safety director must have is the intestinal fortitude and tact necessary to keep management at its job—training, developing, and motivating people.

2. The safety director is the expert who takes a total psychological look at the people and the influences under which they work. He determines the characteristics of individuals and the influences of policy, working conditions, and management's behavior which bear

upon the worker's over-all conduct. This he communicates to management with recommendations about what needs to be done. It is management who influences the employees, but is the safety director who influences management.

COMING EVENTS

In the Field of Safety

Sept. 8-13, Chicago

Illuminating Engineering Society, National Technical Conference (Edgewater Beach Hotel).

Sept. 11-12, York Harbor, Me.

Twenty-fifth Annual Maine State Safety Conference (Marshall House). A. F. Minchin, secretary, Industrial Safety Division, Department of Labor and Industry, Augusta, Me.

Sept. 16-18, Cleveland, Ohio

Fourteenth Annual Ohio State Safety Conference (Hotel Carter). Carl L. Smith, secretary-treasurer, Ohio State Safety Council, 2073 E. 9th St., Cleveland 15, Ohio.

Oct. 20-24, Chicago

Fortieth National Safety Congress and Exposition (Conrad Hilton Hotel). R. L. Forney, general secretary, National Safety Council, 425 N. Michigan Ave., Chicago 11.

Oct. 24, Springfield, Ill.

Sixteenth Annual Meeting of the Illinois Mining Institute (Hotel Abraham Lincoln).

Nov. 12-13, Cincinnati, Ohio

Second Annual Greater Cincinnati Safety Council (Sheraton-Gibson Hotel). Kenneth R. Miller, executive director, Greater Cincinnati Safety Council, 1203 Federal Reserve Bank Bldg., Fourth and Race Sts., Cincinnati, Ohio.

Crews Win Trips for No-Accident Records

Seven line crews, personnel of two towns and one service department crew in the Central division, Idaho Power Company, completed 1951 with no accidents and thus became eligible for a day's trip anywhere on the company's property. The trips are sponsored by the Central division safety committee.

National Safety News, July, 1952



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THE ACCIDENT BAROMETER

Prepared by the Statistical Division, National Safety Council

THE DEATH TOTAL for March was approximately 7,700, a 5 per cent increase over March last year. Most of the increase occurred in deaths from home accidents, but deaths from occupational and public non-motor-vehicle accidents also were more numerous than in 1951. Motor-vehicle accident fatalities numbered about the same as in March last year.

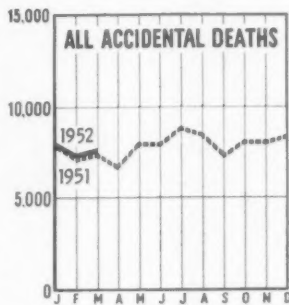
The three-month death total was about 22,400, an increase of 100 deaths over 1951. There were small increases in deaths from motor-vehicle and public non-motor-vehicle accidents. Home accident fatalities showed a slight reduction from last year, while deaths from occupational accidents were about the same as in 1951.

Motor-Vehicle Deaths

The March total of motor-vehicle deaths was 2,700, no change from March last year. However, compared to 1950 it was an increase of 9 per cent.

Deaths for the three months totalled 7,930, an increase of 2 per cent over last year's total of 7,810. The three-month death rate per 100,000,000 vehicle miles was 6.8, a reduction of 6 per cent from the 1951 comparable rate of 7.2.

Of the 46 states reporting for three months, 23 had fewer deaths than in 1951, 2 showed no change and 21 had increases. Reporting cities with populations over 10,000 showed a reduction of 10 per cent



	1952	1951	Change
March	7,700	7,300	+5%
Three Months	22,400	22,300	+1/2%

for March and 7 per cent for the first quarter of 1951.

Regional changes from 1951 in the three-month death totals were:

North Atlantic	-5%
South Atlantic	+6%
North Central	+4%
South Central	+8%
Mountain	-4%
Pacific	-2%

Occupational Accidents

Deaths from occupational accidents totalled approximately 1,100, or 100 more than in March, 1951. The total for the three months was 4,100—no change from last year.

The March frequency rate for plants in seventeen sectional accident prevention contests conducted by the National Safety Council was 6.02, a reduction of 15 per cent from 1951. The March rate for plants in community council inter-plant contests was 8.37, an

increase of 7 per cent over last year. The three-month rate in sectional contests was 6.19, a decrease of 11 per cent; in inter-plant contests it was 8.19—same as 1951.

Public Deaths

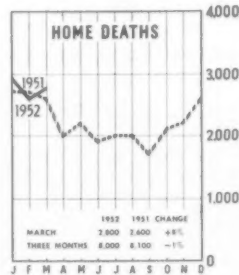
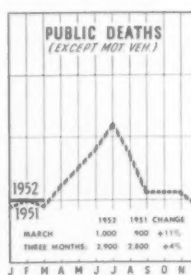
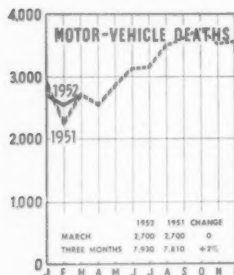
The death total from public non-motor-vehicle accidents in March was 1,000, an increase of 100 deaths over last year.

Deaths during the three months totalled 2,900, or 4 per cent more than in 1951. Most of the increase occurred in deaths from falls and firearms accidents but deaths from burns also were more numerous than last year. Small decreases were reported in fatalities resulting from drowning and transportation accidents. There were sizeable increases in the age groups from 15 to 44 years of age and small increases for children under 5 years old and persons 65 years and over. Deaths of children 5 to 14 years of age and persons 45 to 64 years old showed moderate reductions from 1951.

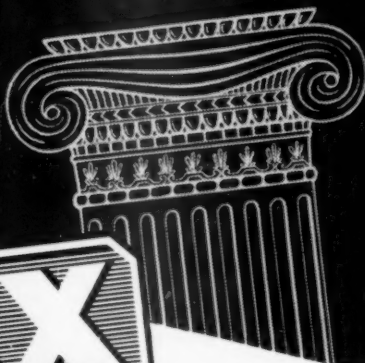
Home Deaths

March deaths from home accidents numbered approximately 2,800, an increase of 8 per cent over last year.

The three-month death total was 8,000, a reduction of 100 deaths from 1951. Decreases in deaths from poisonings, mechanical suffocation, and falls were nearly offset by increases in deaths from firearms accidents and unspecified home accidents. Most of the reduction occurred among persons 65 years and over. Deaths of persons 15 to 24 years and persons 45 to 64 years old were more numerous than last year.



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Air Pollution

(From page 23)

sible that the use of such equipment will increase. The data from such studies will be much more valuable if they are correlated with wind direction.

An aerosol meter which would sample the air and measure and record its aerosol concentration is in the design stages. This equipment could be made to differentiate between black, tarry aerosols and light-colored aerosols, similar to fly ash. Automatic recording of wind direction would be included. Development of this equipment could be carried forward rapidly if there were sufficient demand for it.

Aerosols may also be collected continuously in impingers and Venturi scrubbers. These methods may be designed to include use of the directional-sampling principle.

These methods have not been widely used in air pollution studies except in Los Angeles (3, 13). A high volume air sampler has been developed for filtering aerosols from the air (23). Samples may be collected over periods of 21-72 hours. It is currently being used in the Detroit area in studying air pollution along the Detroit River (24).

Determination of Gases

The gas which has received the most attention in air-pollution studies is sulfur dioxide. The conventional instrument for continuously recording its concentration in the atmosphere is the Thomas Autometer (14). It is understood that the Autometer may now be engineered to include a device for recording the wind direction, as well as sulfur dioxide concentration on the chart. An instrument (15) for measuring the concentration of sulfur-bearing gases, depending on their oxidation by bromine, is also commercially available.

In certain areas, effluent gases containing fluorides may be important. Methods for making individual determinations for fluorides

are available, but there is no instrument for continuously measuring their concentrations in air at the present time. One of the reasons is that the concentrations which appear to be important are "parts per billion" instead of "parts per million." Instrumentation for continuously measuring fluoride concentration is under investigation by the ASTM Committee D-22 on Air Pollution.

Many other gases may be important in specific locations. Unsaturated hydrocarbons have been shown to be important in Los Angeles (3, 17, 18). Gases and odors from the chemical and food-processing industries are sometimes objectionable. These problems are not sufficiently widespread to require that continuously recording instruments be developed.

In sampling gases or aerosols continuously, the directional principle could be employed if desired. To do this, nine sampling bottles are connected through solenoid valves to a vacuum pump. The solenoid valves are controlled by eight segments on a wind vane—one for each of the eight points of the compass. The ninth valve for calm periods or wind velocities below three miles per hour would be operated by a wind-velocity-sensitive vane. In this case, also, the wind-direction hour-meter

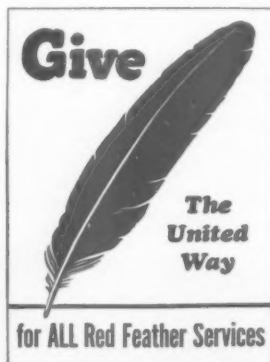
would be required to correlate concentration with time elapsed. Similar results could also be obtained for gases using a modified Thomas Autometer.

Standard methods are available for sampling aerosols and gases and for analyzing these samples for various chemical constituents (5, 6, 7). It is important that the particle size (14) and chemical nature (19) of the contaminant be known so that appropriate methods and techniques may be employed. For these data to have the maximum value, they should be correlated with meteorological parameters and topography.

One of the newer methods of sampling involves the use of kite-balloons (20) as shown in Figure 2. By this means, polyethylene tubing may be raised to various altitudes to collect gas samples. These gas samples are drawn to ground level for analysis. Similarly, an electrostatic precipitator may be raised to various altitudes, as shown in Figure 3, to collect samples of particular matter. Meteorological data may also be collected by this technique. Wind velocity and direction are determined in the field by raising a hot-wire anemometer (Figure 4), using a kite-balloon as a sky hook. In this way, micrometeorological data in the "earth-bound" contaminant air layer are obtained without the aid of permanent structures.

The kite-balloon technique has also been used to study the air-flow pattern over the top of industrial buildings under various meteorological conditions (9). The smoke from a smoke grenade, supported by a kite-balloon and fired at 235 feet, is seen in Figure 5. The path of the smoke grenade fired at 380 feet is shown in Figure 6. Note that the added height permits the smoke to travel horizontally, instead of being carried downward in the lee of the building.

All of these techniques permit a study of the potential air-pollution problems of a new plant site before the shovel starts excavating



for the building foundations. More detailed information concerning their use is available in the literature (9, 20).

Sources of Air Pollution

Much has been said about studying air pollution, and considerable work has been done on how it may be reduced. In industrialized areas, this can be done only by carrying on a systematic study. Such a program will consist of three parts:

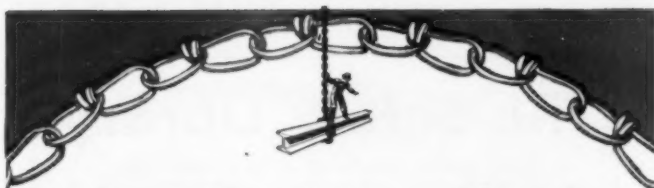
There will be a great variation in the ease with which the source and nature of contaminants can be determined. If the number of plants is small, or the contaminant easily identified, this part of the problem will be simple. In highly industrialized areas, the problem becomes much more difficult. Of course, it will be necessary to use directional collectors and continuous recorders to measure the variation of contaminant concentration with time and variation in meteorological conditions.

Spot checking for specific compounds under favorable meteorological conditions will play its part. In some cases, the culprit compound sought may result from a chemical reaction taking place in the air. The work of Haagen-Smit (17) and Blacet (18) at Los Angeles has indicated that the compound causing plant damage and acting as a lachrymator in Los Angeles was of this nature. Apparently, unsaturated hydrocarbons (such as are found in gasoline) may be oxidized to organic peroxides by sunlight in the presence of nitrogen oxide as a catalyst.

Plant damage and lachrymators have been produced synthetically in plastic chambers under the same conditions and with the concentrations of these compounds which are present in the Los Angeles atmosphere. It may well be that organic peroxides formed under these same conditions are responsible for a part of the air pollution in some of our eastern cities. Research along this line should be made a part of any metropolitan program.

Considerable progress has been made when the compounds responsible for the air pollution and

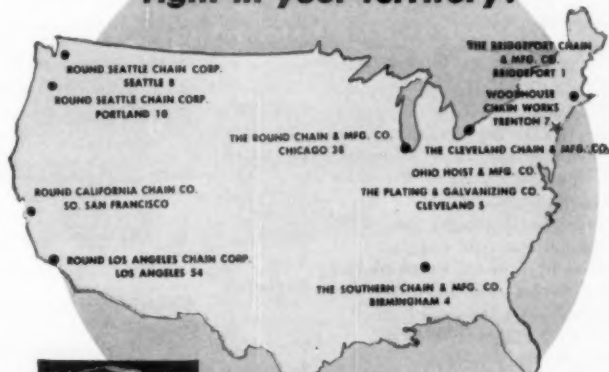
—To page 95



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Books, Pamphlets and Periodicals of Interest to Safety Men

BOOKS AND PAMPHLETS

Air Pollution

Air Pollution Abatement Manual. Chapter 12. Bibliography. Published by Manufacturing Chemists' Association, 246 Woodward Bldg., 15th & H Sts., N.W., Washington 5, D. C. 1952, 57 p. Price 50c (Manual P-13)

Civil Defense

Shelter from Atomic Attack in Existing Buildings. Published by Federal Civil Defense Administration. 1952, 53 p. For sale by the Superintendent of Documents, Washington 25, D. C. Price 20c

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Fire and Explosion Hazards of Thermal Insecticidal Fogging. Published by National Board of Fire Underwriters, 85 John St., New York 38, N.Y. 1952, 45 p. (NBFU Research Report No. 9)

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Hazards of Firing Open, Unconfined Shots in Coal Mines. By M. J. Ankeny. Published by U. S. Bureau of Mines. 1952, 4 p. Available from The Bureau, Publications Distribution Section, 4300 Forbes St., Pittsburgh 13, Pa. Free (Information Circular 7632)

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Safer Airports Urged in Report. Aviation Week. May 26, 1952, p. 14.

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trial Hygiene and Occupational Medicine. April, 1952, p. 311.

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Our Safety Program at Alger Is Profitable. By Earl Gwen, Jr. Fleet Owner. May, 1952, p. 76.

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Electrical Industry

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Employees' Meetings

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How Much Is an Eye Worth? By William T. Cameron. Loss Control. April, 1952, p. 1.

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Fire Protection for Chemicals. By Charles W. Bahme. National Fire Association Protection Association Quarterly. April, 1952.

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—Next page

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Scaffolds

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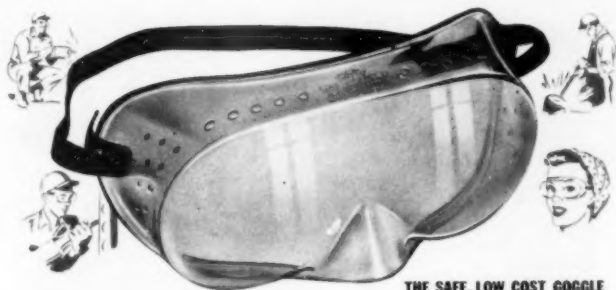
Index Is Ready

The cumulative index to Vol. 65, NATIONAL SAFETY NEWS, January-June, 1952, is now available. It may be secured by writing to the National Safety Council, 425 N. Michigan Ave., Chicago 11.

The best place to find a helping hand is at the end of your arm.

A prejudice is a vagrant opinion without visible means of support.
—Ambrose Bierce.

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THE SAFE, LOW COST GOGGLE FOR ALL IMPACT HAZARDS

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Teachers Visit Foundry



THE HAMILTON FOUNDRY & MACHINE CO. of Hamilton, Ohio, recently participated in the observance of Business-Industry-Education Day in that city by entertaining a group of local teachers.

Twenty-five teachers from public and parochial schools were taken on a tour of the plant and listened to various talks about the foundry industry. They were urged to ask questions about anything they didn't understand.

Handling Magnesium

—From page 31

reactivated to provide a greater supply of magnesium.

The raw material magnesium is remelted for removal of non-metallic impurities or to alloy other elements with it to make it into useful alloys. As with most other metals magnesium seldom is used as pure metal. Most of its applications are in the alloyed state.

The most common alloying elements are aluminum, zinc, and manganese. In the last few years, new alloys have been developed which contain zirconium, cerium, and other rare metals. Although they are still in the development stage, these new alloys already

Safety in the foundry was featured throughout the entire program and each visitor was provided with a pair of safety glasses or safety goggles, which were worn during the entire tour. Permanent safety displays were brought to the attention of the visitors and all of them showed keen interest in the safety program.

In the accompanying photograph store room foreman Henry Kaufman shows a group of teachers a mold in the process of being made.

have found extensive application in aircraft construction. Preparation of alloys is a batch process, usually carried out in large steel pot furnaces. Since magnesium does not attack or react with carbon and silicon carbide, open hearth type furnaces constructed of these materials also can be used. The metal is melted and because it oxidizes very easily and since the oxide formed does not protect the metal underneath, as aluminum oxide protects molten aluminum, it must be protected by fluxes which consist of chlorides and fluorides of alkali and alkaline earth metals.

Magnesium melts at 1202°F and addition of alloying elements lowers this melting point somewhat. At temperatures just above

the melting point the metal can be handled quite safely without oxidation: at higher temperatures fluxes or inert gases protect magnesium from burning. Addition of beryllium or calcium in small amounts will reduce the burning tendency considerably, but since these two elements may affect some properties adversely, they are not always applicable.

Since magnesium does not attack iron, it can be melted safely in iron or steel vessels, the furnace tools can be of iron and the metal and alloys can be transported by pumping through iron pumps and pipes. Because magnesium is a very reactive metal and since it will reduce most other metals from their oxides or compounds, it is necessary to see that all iron and steel furnace tools and implements are free of heavy oxide scales.

The fluxes used in the melting of magnesium are very hygroscopic — they absorb moisture readily. Tools which are covered with flux and have not been dried properly may cause dangerous spattering of molten magnesium, as it would with any other metal. The difference between magnesium and other metals is that the spatters of magnesium will oxidize rapidly or burn while most other metals will just solidify and give off their heat.

This means that the same precaution to use only preheated dry furnace tools is necessary for all molten metals, but particularly is necessary for magnesium because its fluxes attract water so easily. The safe practice is to have a flux pot with molten flux handy in which furnace tools will be preheated to a safe temperature and in which they can be washed clean of adhering oxides and fluxes.

The steel pots in which magnesium is melted will become oxidized on the furnace side and heavy scale of iron oxide forms. This scale will break off the pot and accumulate in the furnace bottom. It is necessary to remove this scale frequently through the

—To page 90



"dip process" assures safer, more flexible GLOVES

Hood's scientific "dip process" precisely controls the amount and viscosity of latex coating on each glove—assures the proper thickness and flexibility needed to make each glove most efficient for the type of work for which it's intended.

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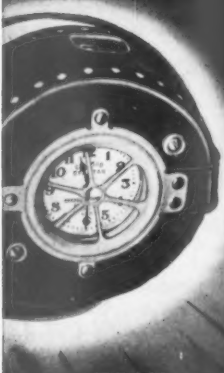
hands are vital...protect them with HOOD GLOVES



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against
**FIRE
THEFT
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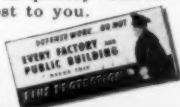
CHICAGO Watchclock System

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LOWERS YOUR INSURANCE RATES!



It keeps track of your watchman's tracks—so accurately and positively that the CHICAGO WATCHCLOCK System is approved by THE UNDERWRITERS' LABORATORIES and by THE FACTORY MUTUALS LABORATORIES. Users earn reduced insurance rates. Thus the CHICAGO WATCHCLOCK System quickly returns its small cost to you.

Write for FREE new folder that completely describes this simple, low-cost, tamper-proof system of extra protection to property. Write for it NOW!



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OFFICES IN PRINCIPAL CITIES

FOR DISTINGUISHED SERVICE

National Safety Council Awards for Outstanding Records

THREE types of awards for outstanding performance in accident prevention are awarded by National Safety Council. These awards are made automatically on the basis of reports submitted to the Council, according to the plan recently adopted by the Industrial Conference and the Board of Directors.

The three types of awards are:

1. The AWARD OF HONOR, the highest award, replaces the Distinguished Service Award. It goes to companies which complete 3,000,000 man-hours without a disabling injury, also to those which meet rigorous statistical standards for safety work, although a no-accident record is not maintained.

2. The AWARD OF MERIT has similar but less severe require-

ments. The number of accident-free man-hours needed to qualify is between 1,000,000 and 3,000,000 and the standards for non-perfect records are proportionately less exacting.

3. The CERTIFICATE OF COMMENDATION is given only for no-accident records for a period covering one or more full calendar years, and involving exposure of 200,000 to 1,000,000 man-hours.

Awards are made automatically for records established within a calendar year, or may be made on special application where consecutive months of two years are involved.

Publication of awards under this plan succeeds "The Honor Roll" department formerly published in NATIONAL SAFETY NEWS.

AWARDS OF HONOR

Allentown-Bethlehem Gas Co., Allentown, Pa. (Entire company).
 The American Sugar Refining Co., Calumet Refinery.
 Consolidated Paper Corp., Ltd., Laurentide Division.
 Davison Chemical Co., Baltimore, Md. (Entire company).
 Firestone Tire & Rubber Co., Akron, Ohio (Entire company).
 Fraser Paper, Ltd., Madawaska, Maine.
 General Mills, Inc., Mechanical Division, Minneapolis, Minn.
 General Motors Corp., Detroit, Mich. (Entire company).
 The Goodyear Tire & Rubber Co., Akron, Ohio.
 The Goodyear Tire & Rubber Co., The Goodyear Tire & Rubber Company of Alabama.
 The Goodyear Tire & Rubber Co., Companhia Goodyear de Brasil.
 The Goodyear Tire & Rubber Co., Goodyear Tire and Rubber Company of Great Britain, Ltd.
 International Business Machines Corp., Plant No. 1, Endicott, N. Y.
 Keebler-Wehl Baking Co., Division of the United Biscuit Co. of America, Philadelphia, Pa., (Entire company).

Mohawk Carpet Mills, Inc., Amsterdam, N. Y. (Entire company).
 Monsanto Chemical Co., Anniston, Ala.
 Nickey Brothers, Inc., Memphis, Tenn.
 The Ohio Fuel Gas Company, Columbus, Ohio. (Entire company).
 Otis Elevator Co., Yonkers Works, Yonkers, N. Y.
 Panama Canal Company, Building Division, Panama Canal Zone.
 The People's Natural Gas Company, Pittsburgh, Pa. (Entire company).
 The Procter and Gamble Mfg. Co., Chicago, Ill.
 The Procter and Gamble Mfg. Co., Port Ivory, Staten Island, N. Y.
 Ralston Purina Co., Circleville, Ohio Branch.
 Republic Steel Corp., Culvert Division, Canton, Ohio.
 Saco-Lowell Shops, Biddleford, Maine (Entire company).
 Servel, Inc., Evansville, Ind. (Entire company).
 The Sperry Corp., Ford Instrument Co. Division.
 Westinghouse Electric Corp., Television-Radio Division, Sunbury, Pa.

AWARDS OF MERIT

Bethlehem Steel Co., Sparrows Point Plant.
 Burroughs Wellcome & Co., U. S. A., Inc., Tuckahoe, N. Y. (Entire company).
 Celanese Corporation of America, Plastics Division, Newark, N. J.
 Chain Belt Co., Plant No. 3, Milwaukee, Wis.
 The Dow Chemical Co., Texas Division.
 General Mills, Inc., Belmond Soy Bean Processing Plant, Chemical Division.
 General Mills, Inc., Buffalo Flour Mill, Food Division.
 General Mills, Inc., Los Angeles Mill, Sperry Division.
 General Mills, Inc., Minneapolis Flour and Feed Mill.
 General Mills, Inc., Rossford Feed Mill, Food Division.
 The Goodyear Tire & Rubber Co., Goodyear Clearwater Mill No. 3, Cartersville, Ga.
 The Goodyear Tire & Rubber Co., Jackson, Mich.
 The Goodyear Tire & Rubber Co., Lincoln Division.
 The Goodyear Tire & Rubber Co., Los Angeles, Calif.
 The Goodyear Tire & Rubber Co., Quebec, P. Q., Canada.
 The Goodyear Tire & Rubber Co., Goodyear Tyre & Rubber Co. (So. Africa), Ltd., Port Elizabeth, Cape Province, South Africa.
 Graniteville Company, Warren Division, Warrenville, S. Carolina.
 Mathieson Chemical Corp., Baltimore Plant.
 Motorola, Inc., Chicago, Ill. (Entire company).
 The Procter and Gamble Co., Drug Products Plant.
 The Procter and Gamble Mfg. Co., Kansas City, Kan.
 Ralston Purina Co., Lafayette, Ind., Branch.
 Sciafo Co., Oakmont, Pa. (Entire company).
 Senator-Rouyn, Ltd., Noranoo, Quebec, Canada (Entire company).
 L. C. Smith & Corona Typewriters, Inc., Syracuse, N. Y. (Entire company).
 Southern States Iron Roofing Co., Savannah Branch.
 Speer Carbon Company, St. Mary's Plant.

—Next page

Spruce Falls Power & Paper Co., Ltd., Kapuskasing, Ontario, Canada.
 Truscon Steel Co., Republic Steel Corporation, Cleveland Plant.
 Truscon Steel Co., Republic Steel Corporation Warehouse, Youngstown, Ohio.
 United States Pipe and Foundry Co., Bessemer, Ala. Works.
 Wood Conversion Co., Cloquet, Minn. (Entire company).

CERTIFICATES OF COMMENDATION

James B. Clow & Sons, Talman Plant.
 General Engineering Works, Chicago, Ill. (Entire company).
 General Mills, Inc., Amarillo Flour Mill, Food Division.
 General Mills, Inc., Duluth Terminal Elevator, Food Division.
 General Mills, Inc., Louisville Flour Mill, Food Division.
 General Mills, Inc., Wichita Flour Mill.
 Graniteville Company, Vauluse Division.
 Johns-Manville Corp., Pulp, Paper & Roofing Plant.
 Monsanto, Ltd., Vancouver, Canada.
 National Distillers Products Corp., Bellows Plant.
 National Distillers Products Corp., Large, Pa.
 Niles Steel Products—Republic Steel, Elvria Plant.
 Pickands Mather & Co., Carmi Carbonslake Mine.
 Republic Steel Corp., Canton Works.
 Joseph E. Seagram and Sons, Inc., Hunter-Wilson Distilling Co.
 Union Drawn Steel Co., Ltd., Hamilton, Ontario, Canada.
 USDA Forest Service, Wayne-Hoosier, Bedford, Ind.

Treat Scorpion Sting With Snake Bite Kit

Members of one of Idaho Power Company's mobile line crews recently found a scorpion lurking in one of the pole holes on a transmission line. The vicious insect, measuring some three inches in length, was captured and preserved in a bottle of alcohol.

Later it was brought to the general office where it was displayed at the receptionist's desk.

The sting of the scorpion, although not fatal to the average adult, can cause serious illness.

The standard snake bite treatment is recommended for the sting. The company provides snake bite kits for the use of all crews and in the event of a scorpion sting, employees are instructed to make shallow crisscross cuts directly over the wound and then to apply the suction tube to suck out the poison.

"Bill's feeling better now... thanks to our Scott"

Type B—illustrated above, with carrying case.

Type A—for fixed installation.

★ When SCOTT Demand Oxygen Inhalators are standard emergency equipment, you can be positive that your personnel and your safety record are more fully protected. Employees requiring oxygen for shock, fume inhalation, heart attacks and other respiratory difficulties can be treated quickly and easily with SCOTT units.

SCOTT Inhalators are portable for "on-the-spot" use. They're simple to operate and supply oxygen "as demanded" by the patient — constant flow instantly available at the touch of a button. And there are no adjustments or special training needed to operate these economical units. SCOTT is the low-cost way to keep safety records high.

Fully guaranteed for one year. Try for 30 days and if not completely satisfied, your money refunded without question. Call in your Safety Equipment Distributor today for a demonstration of the efficient Scott Demand Inhalator or write for complete information.



FOR SAFETY—FOR SERVICE

MEDICAL DIVISION

SCOTT AVIATION CORPORATION

211 ERIE STREET, LANCASTER, N. Y.

CANADA: SAFETY SUPPLY CO., TORONTO — BRANCHES IN ALL PRINCIPAL CITIES
 EXPORT: SOUTHERN OXYGEN CO., 157 Chambers Street, New York 7, N. Y.



• Sweating in hot weather can cause a tired, listless feeling and make every move an effort. These symptoms are caused by the loss of salt from the system.

Salt is lost amazingly fast through perspiration and research has shown that "lassitude" and "loss of will to work" can occur when as little as 10% of the salt in the system is lost. As vigor and vitality go down the accident rate can go up. Prompt replacement of this salt can quickly restore vigor

60-second action

without fear of **nausea**
or stomach distress



and vitality and the most satisfactory way of replacing salt in the system is by taking PEP-UP Impregnated Salt Tablets. These tablets are subjected to an exclusive patented process which forms a complete coating around each crystal of salt in each tablet—when swallowed the tablet dissolves slowly, thus avoiding the nausea and digestive disorders usually noticed with the taking of plain salt.

PEP-UP impregnated salt tablets

release salt immediately!
(not enteric coated)

- * Controlled (slow) dissolving eliminates nausea.
- * Starts dissolving immediately.
- * Dissolves completely in about 100 minutes.
- * No delay in getting salt into system.
- * Withstands high temperatures and rough handling.
- * Can be stored for long periods without deteriorating.
- * Will not absorb moisture from air and clog dispensers.

The tablets meet government specifications for Type III, Class C impregnated Salt tablets (specifications set forth in Federal Standard Stock Catalog No. SS-31d, Section IV (part 5), dated September 11, 1951).

Write for literature and prices.

EXPENDABLE DISPENSER

PEP-UP Impregnated Salt Tablets are packaged in sanitary factory-sealed dispensers at no extra cost. THROW AWAY DISPENSER WHEN EMPTY. HANG UP A NEW ONE. Save the expense of purchasing, servicing and replacing individual dispensers.



UNITED STATES SAFETY SERVICE CO.

KANSAS CITY 6, MISSOURI BRANCHES IN PRINCIPAL INDUSTRIAL CITIES
In Canada PARMELEE, LTD. Toronto

Pioneers of 1912

—From page 25

range of interests and areas. They were: Federal Session; States Session; Mines Session; Transportation Session; Manufacturers Session; Allied Associations Session; Iron and Steel Session.

Among participants in the program were many men who were to play leading roles in the organized safety movement that was yet to be created. Robert W. Campbell, who a year later was to become first president of the National Safety Council, addressed the Congress on "Safety in the Iron and Steel Industry." Will Cameron showed his slides to illustrate a talk on "Accidents to the Eye and How to Prevent Them," speaking for the first time to many of the men who a year later were to put him in office as managing director of the Council.

David Van Schaack and Arthur T. Morey, both of whom later served as presidents of the Council, addressed the Allied Associations meeting. R. C. Richards, another president-to-be, presided at the Transportation Session. Lew Palmer, who was to be Council president in 1916-1917, was everywhere the prime mover for the whole Congress.

In the April NATIONAL SAFETY NEWS we have traced the formal action of the Milwaukee Congress in calling for a national organization in the field of safety, in setting up a committee to bring this about. The personnel of the committee was distinguished; its leadership was decisive. From its work came the 1913 Congress in New York and the organization of the National Industrial Safety Council, which, minus the narrowing word "industrial" in its title, still continues to serve the cause of safety in all aspects and in all of America.

We will meet at the 40th National Safety Congress this October in Chicago. There will be some 12,000 of us, instead of 250. We will be people used to being members of a powerful, respected national team.

It is only fitting and proper that we will pause, during the 1952 Congress, to pay our respects

PROTECT YOURSELF



—by protecting these employees who are using dangerous, old fashioned hand, foot and bar methods of closing hopper bottom car doors with latch-type locks. Prevent ruptures, strained backs, smashed fingers and other serious injuries by providing the Precut Safety Tool. It makes the job safe and easy and also saves time. It's your responsibility. Write today for free folder.

The Trumbull Mfg. Co.
Warren, Ohio

to the pioneers who laid at Milwaukee the foundation stones on which, ever since, the safety movement has been building.

Safety men are no longer lonely!

Present Knudsen Award To Dr. Brownell

THE INDUSTRIAL MEDICAL ASSOCIATION has presented its 14th annual Wm. S. Knudsen Award to Dr. Max R. Burnell, of Flint, Mich., medical director of General Motors.

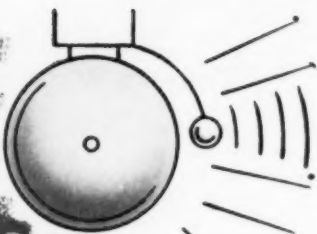
The award is given for the year's outstanding contributions to industrial medicine. In the presentation, Dr. Robert A. Legge, of Berkeley, Calif., winner of the 1951 award, cited Dr. Burnell for the part he played in General Motors' contribution for more than \$1,500,000 to the University of Michigan for establishment of the Institute of Industrial Health. The institute, dedicated to research education and service in industrial medicine, recently began operation.

The IMA's annual banquet, at which the award was presented, was a highlight of the 1952 Industrial Health Conference which was held in the Netherland Plaza Hotel. Other groups participating in the conference were the American Industrial Hygiene Association, the American Conference of Governmental Industrial Hygienists, the American Association of Industrial Nurses, and the American Association of Industrial Dentists.

The Knudsen Award first was presented in 1937 by General William S. Knudsen, emergency war production chief and former president of General Motors Corporation. Upon his death the IMA continued the award as a memorial to General Knudsen.

Dr. Burnell, a native of Metamora, Mich., and a graduate of the University of Michigan Medical School, practiced obstetrics and gynecology since 1921 in Flint and organized the medical department of the AC Spark Plug Division of General Motors in 1931, serving as its director. He became medical director of General Motors in July, 1949.

NO
"FIRE-DRILL"
NEEDED
with *THIS*
EXTINGUISHER



One glance tells you just how the Randolph operates—no instructions, no explanations necessary! That's why *anybody* can get a Randolph into action fast! No valves to turn, no nozzles to adjust; just point and press your thumb and Randolph's cloud of snowy CO₂ kills fire instantly!

Non-damaging Randolph CO₂ evaporates without a trace, is non-toxic, won't conduct electricity, deteriorate or freeze. And *all* Randolph Models are Underwriters' Approved.

A COMPLETE LINE OF EXTINGUISHERS AND AUTOMATIC SYSTEMS

Learn how Randolph gives your plant panic-proof, split-second protection against flammable liquid, electrical and other hard-to-handle fires! Write Randolph Laboratories, Inc., 2 E. Kinzie St., Chicago 11, Illinois.



"They're Nuts About Safety"

THE NEVER-ENDING DRIVE to keep everyone safety conscious was given a new twist at the works of Dominion Bridge Company Ltd., Lachine, Que., recently. An interdepartmental contest, as part of a periodic campaign, called for each shop to design for itself a safety crest which would symbolize its interest in accident prevention.

Results of this contest were amazing. Twenty departments submitted designs and all were of a high standard. An idea of the type of crest developed may be obtained from the accompanying illustrations.



The Bolt Shop's entry in the Dominion Bridge Company's contest for departmental safety crests won the highest rating. The slogan couldn't be translated into French literally.

Rules for the contest were simple:

1. The outline of the crest had to conform to one of two predetermined shapes.
2. The crest had to contain something descriptive of the department of its work.
3. The design had to employ a safety slogan and the "green cross" generally recognized as the symbol of safety.

It was also suggested that the design should be the work of a group rather than of one individual.

Lively interest was developed in all sections of the plant. In some departments each man was issued with a miniature outline on which to jot down his ideas. All ideas



The Paint Department's crest also got a high rating in the contest.

were then considered by a shop committee, headed by the foreman, which made the final choice for the department. A man with originality and ability to sketch neatly was assigned to help any foreman requiring assistance to put ideas into shape. This contributed greatly to the smooth running of the contest.

Twenty sketches, as finally agreed upon by the foremen and their committees, were deposited at the Safety Office as formal entries. Only one entry was accepted from each department. All sketches were turned over to a Dominion Bridge employee who has con-



The Carpenter Shop submitted this design in the contest.

siderable artistic ability. He reproduced the sketches to full size (about 22" x 22") and in color in his spare time. All departments were thereby given equal oppor-

tunity to prepare their crest in an attractive manner.

The finished crests were placed on display in the plant meeting hall and viewed by employees. An impartial committee then judged the crests for originality of design and slogan, and general effectiveness as a safety message. The crest receiving highest credit was that submitted by the Company's Bolt Shop which, with an apt sense of humor, bore the slogan "We're Nuts About Safety."

The President's Medal

Awards made by the National Safety Council for successful application of artificial respiration

ROBERT E. BAIN, telephone station installer, The Pacific Telephone and Telegraph Co., Compton, Calif.—suspended respiration due to convulsive pressure.

C. B. BROOKS, JR., distributing superintendent, Texas Power & Light Co., Terrell, Texas—drowning.

O. R. DEAN, utility lineman, Texas Power & Light Co., Terrell, Texas—drowning.

LEWIS L. NELSON, roughneck, Phillips Petroleum Co., San Angelo, Texas—suspended respiration due to suffocation.

MAJOR W. O. WETMORE, retired army medical corps officer, St. Petersburg, Fla.—electric shock.

JOHN C. PIRKLE, pumper, The Texas Company Production Dept., Sundown, Texas—suspended respiration due to strangulation.

PAUL HENRY ROGERS, pumper, The Texas Company, Midland, Texas—gas asphyxiation.

LESTER GERALD ARMSTRONG, steam fitter, J. F. Crowley Co. Ltd., Dundas, Ontario—gas asphyxiation. Certificate of Assistance to ALEX McEACHERN.

O. B. WARD, patrolman, Texas Power & Light Co., Jewett, Texas—drowning.



B R E C K

H A N D C L E A N E R

Breck Hand Cleaner is an efficient, heavy-duty cleaner which is non-irritating and contains no abrasive materials. Breck Hand Cleaner cleans without lathering, and because of its mild yet thorough cleaning action aids in the prevention of skin irritation. About a teaspoonful of Breck Hand Cleaner is applied, without water, to the hands and arms and rubbed in well, followed by thorough rinsing. The excellent penetrating action of Breck Hand Cleaner loosens dirt, grime, and other soils and permits their easy removal in the rinse. Breck Hand Cleaner is formulated to rinse equally well in both hard and soft water. Breck Hand Cleaner has been found especially useful in helping to remove oil, grease, dirt, dust, grime, paint and other soils from the skin.



A Breck Industrial Preparations Booklet will be forwarded to you upon request.

JOHN H. BRECK INC. • MANUFACTURING CHEMISTS • SPRINGFIELD 1 MASSACHUSETTS
NEW YORK • CHICAGO • SAN FRANCISCO • OTTAWA CANADA

Personals

ASSE Names Johnson Managing Director

JASPER B. JOHNSON has been named managing director of the American Society of Safety Engineers.

Mr. Johnson, who joined the headquarters staff as assistant secretary in 1943, is a member of the St. Louis Chapter, ASSE.



Jasper B. Johnson

A native of Illinois, he was educated at Kansas State Normal and Manual Training School and the University of Illinois. He is a former member of the Engineering Division of the St. Louis Safety Council and a past president of the Madison County, Illinois, Safety Council.

Mr. Johnson has served as staff representative of the Aircraft Manufacturing and the Air Transport Sections of the National Safety Council.

J. ROBERT D. BROWN has been appointed assistant manager of the Accident Prevention Bureau of the Portland Cement Association, according to an announcement made recently by Carl D. Franks, the

Association's executive vice-president.

Mr. Brown has been a member of the staff of the Association's Accident Prevention Bureau since 1946. Prior to joining the Association he served as assistant chief of civilian personnel and safety in the Sixth Service Command of the U.S. Army, and had been in safety work for the U.S. Office of Education and the National Safety Council.

Mr. Brown received his B. A. degree in 1930 and his Ph.D. in 1934 from Yale University. He also served for two years in a hospital unit of the U.S. Navy during World War II.

Crown Zellerbach Names Gault to Succeed Hartwig

Crown Zellerbach Corporation has announced the appointment of V. C. GAULT of Camas, Wash., as general safety supervisor, succeeding OTTO R. HARTWIG of Portland, Ore., who retired July 1.

Mr. Hartwig served the corporation during 15 years of marked advances in the promotion of



V. C. Gault



Otto R. Hartwig

safety and enjoys both Pacific Coast and national recognition in that field. He plans to establish his own consulting service in the Portland area.

Mr. Gault was formerly industrial and community relations supervisor at the company's Camas, Wash. division. He has been with Crown Zellerbach about 35 years. He is well known in Pacific Northwest personnel and pulp and paper circles.

ALLEN L. COBB, safety supervisor, Kodak Park Works, Eastman Kodak Company, Rochester, N. Y., was elected president of the National Fire Protection Association, as the NFPA closed its five-day parley at New York on June 13.

Others elected were: Vice-Presidents, T. Seddon Duke, President, Star Sprinkler Corp., Philadelphia, and John A. Neale, chief engineer, National Board of Fire Underwriters, New York; Secretary-Treasurer, Hovey T. Freeman, president and treasurer, Manufacturers Mutual Fire Insurance Co., Providence, R. I.; Chairman of Board of Directors, Richard E. Vernor, manager, Fire Prevention Department, Western Actuarial Bureau, Chicago.

Named to serve on the NFPA

—To page 70

STONEHOUSE SIGNS For ACCIDENT PREVENTION



White Hot Metal

...just one process of American Industry in action. And it's evident how such production holds ever present hazards for workers.

To prevent accidents, reduce hazards, is one of Industry's pressing problems...to safeguard men and women in industrial plants across the nation.

STONEHOUSE SIGNS

...teach your employees to be careful...to take no chances. The hundreds of Stonehouse stock-worded Accident Prevention signs constantly promote the spirit and practice of Safety.

Our complete Catalog; 64 pages, in full color, is free on request.

 **Stonehouse**

"Signs Since 1863"

**SIGNS, inc. MANUFACTURERS • Stonehouse Bldg., 9th at Larimer
Denver 4, Colorado**



ACCIDENT PREVENTION • *steel* SIGNS IN STANDARD COLORS AND DESIGNS

THE *Right* PROTECTION



is DOCKSON GOGGLES

BE SAFE against sparks, dust particles, chemical splash and fumes, glare and injurious rays with DOCKSON GOGGLES in more than 20 models and a full line of modern lenses for all hazards.



BE COMFORTABLE with smooth-sitting DOCKSON GOGGLES. Excess weight is engineered out.



BE ECONOMICAL, get longer use from DOCKSON GOGGLES. "BUILT FOR BETTER SERVICE".



THERE IS A DOCKSON DISTRIBUTOR NEAR YOU—Let us send you his name and our complete catalog of DOCKSON HEAD AND EYE PROTECTION.



Personals

—From page 68

Board of Directors for three years were: Warren J. Baker, Philadelphia; P. E. Dannenman, West Orange, N. J.; J. E. Frederickson, Detroit; Frank D. Ross, Hartford; and Henry G. Thomas, Hartford.

Among the 1953 Nominating Committee chosen were: Roger H. Wingate, Boston, Chairman; J. B. McCullough, New York; and R. J. Vanderbeck, New York.

It was voted to hold the 57th Annual Meeting of the NFPA in Chicago.

M. L. ANDREWS, chief safety engineer, Douglas Aircraft Company, El Segundo, and A. M. NOYES, director, industrial safety, Greater Los Angeles Chapter, National Safety Council, were voted life memberships in the Southern California Industrial Safety Society recently. Andrews was secretary during 1951, and Noyes was president. Both now serve on the board of directors.

AEC Names Bugher To Succeed Warren

DR. JOHN C. BUGHER has been appointed Director of the U. S. Atomic Energy Commission's Division of Biology and Medicine, succeeding Dr. SHIELDS WARREN, who resigned. Dr. Warren is now a member of the AEC's Advisory Committee for Biology and Medicine.

Dr. Bugher had been Deputy Director of the Biology and Medicine Division since February, 1951. He is a member of the International Health Division of the Rockefeller Foundation since 1938. He has engaged in research and control of infectious diseases including work on control of yellow fever in South America and Africa and the control of other tropical diseases.

Born in Upland, Ind., Dr. Bugher was graduated from the University of Michigan with an A.B. degree in 1921, received his M.D. there in 1929 and M.S. in 1932. From 1923 to 1925 he was assistant in bacteriology at Michigan and from 1929 to 1938 he was instructor and assistant pro-

fessor of bacteriology at the medical school. He was Public Health Director for South Haven, Mich., from 1926 to 1928. Dr. Bugher is a member of the Society of Experimental Pathology, Association of Pathology and Bacteriology, Association of Cancer Research, Society of Clinical Pathology, American Medical Association, the American Society of Tropical Medicine and the Royal Society of Tropical Medicine.

JOHN J. AHERN, director, Department of Fire Protection and Safety Engineering, Illinois Institute of Technology, Chicago, was elected president of the Society of Fire Protection Engineers at the annual meeting on June 12, 1952 in New York. Other officers elected at this meeting were: First Vice-President, John A. Neale, chief engineer, National Board of Fire Underwriters, New York City; Second Vice-President, Elmer F. Reske, manager, Cook County Inspection Bureau, Chicago; and Secretary and Treasurer, Robert S. Moulton, technical secretary, National Fire Protection Association, Boston.

Obituary

GEORGE HODGE

GEORGE HODGE, a retired International Harvester company official and a popular speaker at safety meetings, died recently at his home in River Forest, Ill. He was 62 years old.

Mr. Hodge joined International Harvester in 1907 at Richmond, Ind., where he remained for 15 years. Then he spent seven years in Chicago and five in Lincoln, Neb. In 1934 he returned to the general offices in Chicago. At the time of his retirement in 1948, Mr. Hodge was assistant to the vice president in charge of industrial relations.

He is survived by his widow, Shiloh, and two sons, Robert and Charles.

The secret of success and happiness lies not in what you like, but in liking what you do.

"Our Country's Strength is Created..."

REESE H. TAYLOR
President, Union Oil Company of California



"Our country's strength is created by the responsibility and solidarity of individual citizens in a self-chosen government and economy. It can—and must—be perpetuated against all who seek to undermine it. The men and women who invest regularly in United States Defense Bonds are contributing to our national integrity and to the traditions of personal independence so characteristic of a free people."

Every pay day, 6,500,000 employed men and women . . . "are contributing to our national integrity and to the tradition of personal independence . . ." by the systematic purchase of United States Defense Bonds.

How important is this contribution to national economy and personal security? Let's look at a few figures.

- the cumulative purchases of 6,500,000 Payroll Savers add up to \$130,000,000 per month.
- the number of individual E Bonds sold in 1951 totaled 68,069,000 pieces—8% more than in 1950.
- purchases of \$25 and \$50 E Bonds—the denominations popular with Payroll Savers—were greater than the sales of \$500 and \$1,000 E Bonds.
- monthly redemptions of unmatured E Bonds during each of 9 months (April to December, 1951) were less than 1% of the amounts outstanding.
- the cash value of Series E Bonds held by individuals on December 31, 1951, amounted to \$34,727,000,000—\$4.3 billions more than the cash value of Series E's outstanding in August, 1945.

That Americans have built personal security and a reservoir of purchasing power exceeding \$34.7 billions is due in no small measure to the patriotism and foresight of men like Mr. Taylor and other leaders of industry who have made the Payroll Savings Plan available to their employees.

For help with your Payroll Savings Plan, phone, wire or write to Savings Bond Division, U.S. Treasury Department, Suite 700, Washington Building, Washington, D. C.

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THIS . . . It's Sawyer's ab-
solute top quality and there's
nothing else on the market that
can beat it for



100% WATERPROOF—made with top quality base fabric saturation-coated with 6 coats of genuine DuPont Neoprene Latex.*

ROTPROOF—not affected by grease, oil or gasoline. Highly resistant to acid solutions. *Positively will not blister, crack or peel.*

TOUGH AS MULE-HIDE — wears like iron, takes endless snagging, rubbing, scraping and still gives full protection.

Also: Complete industrial suits, three-quarter length coats, long coats and coveralls. All clothing made in black or yellow. Wide variety of styles and sizes.

*Sawyer fabrics are coated by The Brunson Company, a division of

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Adopt Pension Plan for NSC Chapters



EMPLOYEES of National Safety Council chapters will be eligible for participation in a Retirement Income Plan, set up through the formal signing of a trust agreement at NSC headquarters as this issue went to press. The plan became effective when Sheldon Weaver (seated, above), vice-president of Northern Trust Company as Trustee, signed the Agreement and Declaration of Trust, after it had been signed by (left to right) R. L. Forney, general secretary, and Ned H. Dearborn, President, National Safety Council, as sponsor, and Walter D. Ladd, St. Joseph, Mo., representing the Conference of Local Safety Organizations. Full details of the plan will be mailed soon to all chapters, and will be covered in the August NATIONAL SAFETY NEWS.

Start Research on City's Dirt

START OF A NEW long-term research project to learn exactly where this city's dirt comes from has been announced by Dr. Haldon A. Leedy, director of Armour Research Foundation of Illinois Institute of Technology, Chicago.

Cost of the program for the first year will be about \$25,000. Dr. Leedy told the Midwestern Air Pollution Prevention Association at a luncheon meeting at the Western Society of Engineers.

Known as "MAPPA," the Association will sponsor the extensive project to be conducted by the Foundation.

The new project will include three major phases.

First, a statistical survey, based on records kept by the City Department of Smoke Inspection and Abatement, will be made to learn the factors responsible for past smoke violations. Data from case histories of violations will be tab-

ulated and interpreted by statistical methods.

The second part of the project will consist of microscopic study of Chicago's dustfall to determine the source. Hundreds of samples from the Chicago area, including the suburbs, will be analyzed and classified as to contents and source by the Foundation.

The second phase is expected to take several years of study. It will include sampling from specific stacks during definite burning operations followed by microscopic and photomicrographic study of these samples. Many samples will be necessary to cover the various fuels, types of equipment, and burning conditions.

As soon as results are available, MAPPA plans the third phase, an educational campaign. This will include publication of pamphlets on where Chicago's dirt comes from and how to reduce it, and presentation of lectures before organizations which can help prevent air pollution.

AEC Sets Up Hygiene Training Program

A ONE-YEAR fellowship training program for industrial hygienists, starting in the Fall of 1952, has been inaugurated by the Atomic Energy Commission.

If qualified candidates can be obtained, up to four will be selected for one school year of academic training. Commenting upon this program, Dr. Shields Warren, director of AEC's Division of Biology and Medicine, said: "At the present time the supply of chemists and engineers equipped with the special knowledge required for positions in industrial hygiene is extremely limited. There is need at present for industrial hygienists at several of AEC's installations and the expansion program will create requirement for others."

The stipend for the Industrial Hygiene Fellows would be: \$1,500 per annum if single; an additional \$500 if married and \$250 additional for each of two dependent children. If the Fellow has completed one or more years of graduate work in a related field he will be allowed \$200 additional.

Candidates will be selected for the AEC by a Committee headed by H. F. Schulte, group leader, Industrial Hygiene Group, Los Alamos Scientific Laboratory. Others on the Committee are Prof. Philip Drinker, School of Public Health, Department of Industrial Hygiene, Harvard University; Prof. Theodore Hatch, School of Public Health, University of Pittsburgh (Pa.); Merril Eisenbud, director, Health and Safety Division, New York Operations Office, AEC; E. C. Barnes, manager, Industrial Hygiene Sub-Division, Research Department, Atomic Power Division, Westinghouse Electric Corp., and Dr. Warren.

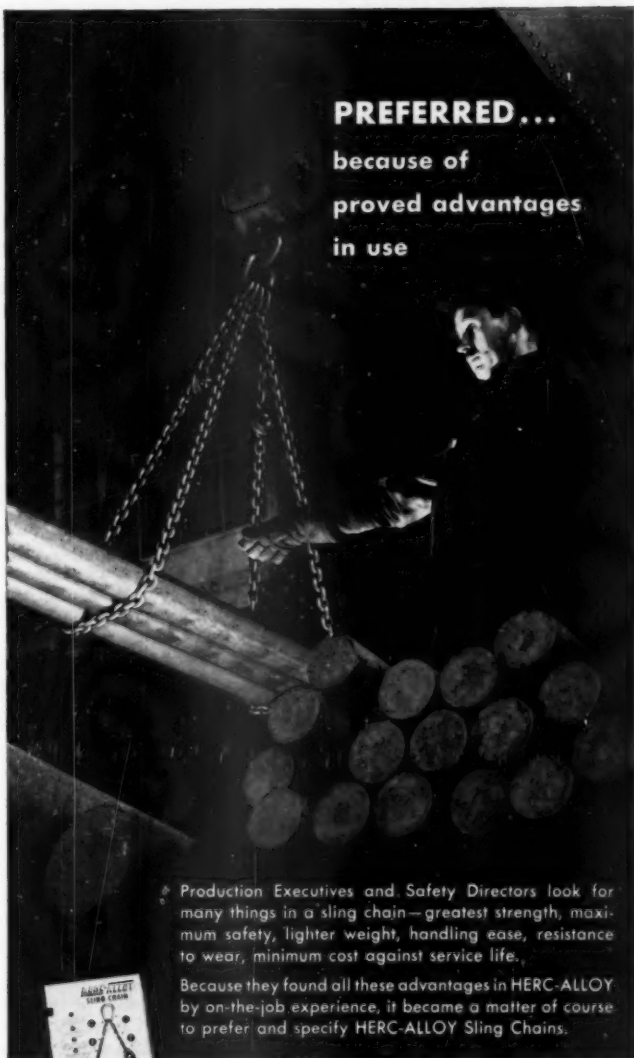
All candidates would be required to have a security investigation before being appointed.

Applicants must have a degree in engineering (preferably chemical), chemistry or physics. Application blanks may be obtained from Mr. Eisenbud, New York Operations Office, U. S. Atomic Energy Commission, P. O. Box 30, Ansonia Station, New York 23.

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PREFERRED...
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Production Executives and Safety Directors look for many things in a sling chain—greatest strength, maximum safety, lighter weight, handling ease, resistance to wear, minimum cost against service life.

Because they found all these advantages in HERC-ALLOY by on-the-job experience, it became a matter of course to prefer and specify HERC-ALLOY Sling Chains.



Write for illustrated Data Book No. 3 which contains helpful information on sling chain selection and use.

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Choose from four sizes (1½, 3, 5 and 7½ H.P.) . . . available with T.E.F.C. Class I and Class II motors for hazardous locations. Also, a gasoline engine powered 5 H.P. model. FREE Engineering Survey of your dust conditions to help you select the right Hoffman portable for your specific requirements.

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Congress Memo

CHICAGO will be the scene of the National Safety Congress the week of October 20, as safety men from all over the United States and Canada assemble to discuss new methods and ideas for the fortieth time since the First Cooperative Safety Congress was held in Milwaukee in 1912.

This year's program will be marked by special features commemorating the first Congress. The National Safety Council is desirous of having present as many persons as possible who participated in that first Congress. Anyone who participated in any way is urged to contact the Council offices.

For the five days from October 20 to 24 over 200 meetings—general and subject sessions and meetings of sections and specialized groups—will be held in five hotels. This year the Conrad Hilton, Congress, Morrison, LaSalle and Sheraton will provide the meeting rooms.

Among the prominent speakers on the program are: Jesse W. Randall, president of The Travelers Insurance Company, Hartford, Conn., who will address the Annual Council Meeting on Monday; the Honorable Luther W. Youngdahl, Judge of the United States District Court for the District of Columbia and formerly governor of Minnesota, who will be the speaker at the Banquet; and Dr. Arthur Secord, supervisor of adult education at Brooklyn



Dr. Arthur Secord

College, Brooklyn, N. Y., who will conduct the Early Morning Sessions, Tuesday through Friday.

In contrast to last year, the entire Safety Exposition will be housed in the Conrad Hilton, where available exhibit space will exceed that of any previous year.

Those who plan to attend the Congress, but have not as yet made reservations, should do so as soon as possible. The demand for rooms has been great and the majority of available Loop hotel rooms have been reserved. Requests for reservations should be addressed to Congress Housing Bureau, National Safety Council, 425 North Michigan Avenue, Chicago 11.

Family Problems Lead Workers' Worries

An important method of helping troubled industrial workers to attain mental well-being is to get at the root of their family problems.

Dr. Carl J. Gatter, chief of the Medical Department of the Pittsburgh Works of Jones & Laughlin Steel Corp., told a recent meeting of the Industrial Health Conference at Cincinnati that the troubles the worker brings to the plant with him generally concern his relationship with his wife or worries over his children.

In three out of every four cases,

Dr. Gatter added, the worker is worrying about problems affecting his children. Among the questions asked by disturbed workers are those concerning a child's eating habits, nightmares, bed wetting, thinness, finger nail biting, refusal to play with other children, failure in school, nervousness, and stammering.

Dr. Gatter counselled members of the Industrial Medical Association to "sit and listen patiently to the problem."

"The doctor must decide whether the problem is comparatively simple or whether further study is necessary. No condition

which properly falls into the realm of psychiatry is considered in this plan. We feel that through the medium of short interviews, . . . we can make a definite contribution to the mental health of our workers."

Mishaps in Candy Plants Cost \$5,000,000 Yearly

ACCIDENTS to workers in candy plants are costing the industry approximately \$5,000,000 a year, a safety expert told the National Confectioners Association's 69th annual convention, which was held in Chicago recently.

R. E. Dalstrom, midwest safety director for the Lumbermens Mutual Casualty Company, said the average cost of an industrial accident under present compensation laws is almost double that of 10 years ago.

He told a session in the Conrad Hilton Hotel that the estimated \$1,250,000 annual payments to employees for disability and medical payments cannot be construed as the sole cost of accidents.

"Add to this figure all the other indirect losses which affect production schedules, and the total industry loss can be \$5,000,000," Dalstrom stated. Some factors adding to the mishap cost are as follows:

1. Employees in the vicinity of an accident stop work to assist the injured worker, look, or find out what happened. In case of serious accident, the efficiency of the entire plant may be impaired for the rest of the day.

2. Reduced efficiency of temporary or substitute workers, especially if the injured worker was performing a specialized job.

3. Mounting costs of detailed operations including preparation of reports, investigations, and testimony at hearings.

Dalstrom declared that a good safety record is a better public relations device than reports of accidents in plants, and he added, "The plant with the no-accident record has a better chance of attracting the best workers."

When you take responsibility on your shoulders, there's no room for a chip.

You've reached middle age when your wife tells you to pull in your stomach—and you already have.

"Stop accidents at their source!" This vital task is handled for thousands of our policyholder-owners by practical, company-trained Safety Engineers—each a member of an Employers Mutuals Team.



. . . Your business, your personnel and your property deserve the unsurpassed insurance protection that Employers Mutuals "teamwork" provides—often at astounding savings in premium costs!



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AN IMPROVED REECE "Hot Foot Sandal"



No. 351—For hot steel. Straps on quickly over any shoe. Heat proof—puncture proof. One inch thick seasoned wood. Two strong sole leather hinges. Sturdy leather counter-adjustable leather straps. Sizes—Small—Medium—Large.

STRONG STEEL TOE



No. 504-S—Reece All-Purpose Shoe with durable leather uppers, steel toe, Reece "PERFECT ROCKER" Wooden Sole. Safe, reliable, dependable for factories, platers, oil refineries, foundries, steel mills. Also other styles. Sizes—5-13. No half sizes.

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There is no
substitute
for Reece
Wooden
Soles

A. J. R. Curtis Honored by PCA



A. J. R. CURTIS, who headed the Accident Prevention Bureau of the Portland Cement Association for 25 of his 36 years' service for that organization, was honored at the spring meeting of the Accident Prevention Committee of Chicago.

A handsomely illuminated and framed testimonial was presented to Mr. Curtis at a luncheon addressed by John W. Mather, chairman of the Accident Prevention Committee, and Smith W. Storey, chairman of the Board of Directors of the Portland Cement Association. Mr. Mather is industrial relations manager of Lone Star Cement Corporation, New York, and Mr. Storey is president of Consolidated Cement Corporation

and General Portland Cement Company, Chicago.

The testimonial bore signatures of the members of the Accident Prevention Committee, the Accident Prevention Bureau staff, and the officials of the PCA in appreciation of Mr. Curtis' valued service.

In the above group are: Front: C. D. Franks, executive vice-president, PCA; A. J. R. Curtis; John W. Mather; W. D. M. Allan, secretary, and A. B. Stall, treasurer, PCA. Rear: A. Allan Bates, vice-president for research and development; G. Donald Kennedy, consulting engineer and assistant to the president; Ivan F. LeGore, manager, Accident Prevention Bureau, PCA.

Newly Designed Floor Rest

A new safety floor rest, which is designed for safety and increasing production of grinding all types of metal castings on flood grinders, is shown in the accompanying photographs.

The rest is mounted on the grinders and can be used on the left or the right side of the wheel. The rest should be mounted so $\frac{1}{4}$ inch clearance will be maintained at all times.

The use of the rest fulcrum and pressure bar eliminates the fatigue, fear, and hazards that exist where the rest is not in use.

Employees are more willing to





work on stand grinding jobs where this type of equipment is being used.

The use of the rest fulcrum and pressure bar eliminates the loss of time in setting up castings for grinding. All shapes and sizes of castings for stand grinding operations can be processed with this rest and fulcrum procedure.

The pressure bar is operated from the side of the rest so the operator may apply as much pressure as needed in the operation. This is done with very little exertion or strain on the part of the operator due to the leverage gained by using the pressure bar.

The safety of this type of rest is the fact that the operator stands completely out of line with the rotating wheel. Other safety features are:

1. Injury from the broken or exploding wheel.
2. Operators hands are at no time applying pressure and pushing into the grinding wheel.
3. He is completely out of range of the free flying dust and sparks coming from the casting contact with the wheel.
4. He is completely out of range of travel, should anything happen that the casting would be thrown by the wheel.
5. He is in a position at all times to control the pressure and brace himself for any possible unexpected movement that it might be necessary for him to take while applying pressure during the grinding operation.

The rest, known as the Superior Safety Floor Rest, was designed by Anthony Pizzino of Massillon, Ohio.

Pyrene

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**A PYRENE WON'T STOP CARELESSNESS—
IT WILL KILL FIRES!**







A cardboard locker caught fire in the basement and soon this whole Dayton, Ohio, building was ablaze. Date: January 6, 1950. Loss: \$291,500.

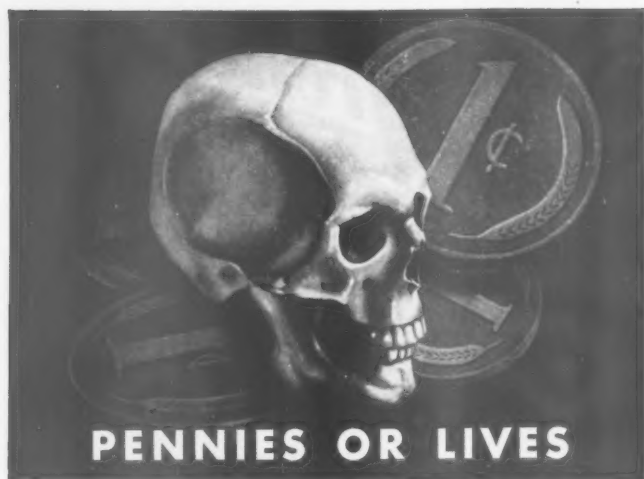
There's a Pyrene for every fire hazard

The right extinguisher at the right time can often prevent enormous losses. Whatever your fire hazard, there's a Pyrene® to cope with it—for Pyrene makes everything from hand extinguishers to complete automatic fire-fighting systems.

*T.M. Reg. U.S. Pat. Off.

 <p>Vaporizing Liquid World's best all-purpose extinguisher.</p>	 <p>Cartridge-Operated For ordinary fires. No annual recharging.</p>	 <p>Chemical Foam For flammable liquids, ordinary combustibles.</p>	 <p>Systems Large and small, manual and automatic.</p>
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PENNIES OR LIVES



Behind many industrial accidents is the ghost of equipment failure, often caused by skimping on quality in favor of a few cents saved.



Such economies are always risky, always more costly in the end.



But when you use Laughlin Safety Hooks (and there are 15 sizes in eye, shank and swivel patterns) the extra pennies you spend will pay big dividends in protection of men and equipment.

The latch locks the load. It cannot open until released by the operator. And it's made of pressed steel or bronze with a stainless steel spring that won't rust or weaken. The cam is an integral part of the hook forging for extra strength.

The quality construction of Laughlin Safety Hooks is typical of all of Laughlin's 1500 types and sizes of drop forged wire rope and chain fittings. So remember—to save with safety always insist on the name LAUGHLIN for original equipment or replacement fittings.

Our Catalog No. 150 shows and describes the complete line. A free copy will be sent on request.

THE THOMAS LAUGHLIN CO.



73 FORE ST., PORTLAND, MAINE

LAUGHLIN

THE MOST COMPLETE LINE OF WIRE
ROPE AND CHAIN FITTINGS

ASKED and ANSWERED

Assistance with problems of accident prevention and industrial health is offered by National Safety Council. All inquiries are answered by mail and a few topics are selected for publication.

Transporting Plate Glass

Question: Do you have any information on the carrying of large sheets of plate glass on trucks? We know there is a regular side attachment that is part of trucks that carry glass, but we as a building material organization may have to carry it only three or four or five times a week, but not nearly enough to warrant a special truck.

It seems to us that someone must have a temporary attachment that can be taken off at will and is safe. If you have any data on this it will be sincerely appreciated, because we feel there is a hazard in the way we now handle glass—a hazard from breakage and a hazard from hernia.

Answer: We checked with one of the large manufacturers of plate glass, and they informed us that the only safe way to carry large sheets of glass on a truck is with a specially built A-frame. These special frames are quite expensive, costing in the neighborhood of \$3000, because they must be constructed of the best seasoned hardwood with brass connections to prevent warping and corrosion. As far as our contact knows there is no temporary attachment which can be used.

It does seem logical, though, that it should be possible to design a reasonably safe attachment for use with an open bodied truck. It would, of course, be in the shape of an A-frame. The requirements would be that when it is mounted it should be perfectly rigid and should provide a perfectly even support for the glass at all points. The frame could be made of metal tubing, with padding provided on all surfaces which support the glass. It might consist of three or four metal A-frames tied together with cross

members, the whole welded together. It could be lifted on and off the truck with a light crane, or even a block and tackle. It could be secured to the truck bed with flanges and heavy bolts to eliminate the possibility of shifting on the bed. Padding could be accomplished by attaching a series of parallel wood strips along the faces of the structure, by means of countersunk bolts.

Nylon Rope

Question: Are nylon ropes suitable to use as safety ropes? Quarrymen complain that they are too thin.

Answer: As far as we know or have been able to learn, no quarries in this country are using nylon rope as safety rope. However, nylon rope does appear to have some advantages for this purpose. Nylon rope of the same size has two to three times the strength of manila rope and it resists abrasion several times more effectively than does manila rope. A splice requires an extra tuck in nylon rope.

It is our understanding that it does not resist weather as well as does manila rope and that it cannot be treated. As you know, the nylon rope has a great deal more stretch.

Color Slides

—From page 29

self rather naturally into three aspects—what the hazards are, what precautions the individual employee can take to protect himself against them, and why he should take those precautions. The third probably is most important, for the most elaborate protection against accidental injury is valueless if the employee, either deliberately or carelessly, fails to avail himself of it. Giving every worker a thorough understanding of the dangers of careless or thoughtless actions, by showing him what can happen to him if he doesn't observe the proper practices, is the best way to make him want to avoid these hazards. And that can best be done by showing him pictures taken right where he works, and pointing out to him both the

How do we catch his attention over and over again, to read and re-read your safety messages until safety becomes a habit?

Get him in his off-moments, while he is relaxed, receptive . . .

Got Him!



Here is a message delivered to him, personally, on the crisp, clean AJAX paper drinking cup that only he will ever use. It is there in his hand, right before his eyes, where he will see it and absorb its important messages several times a day.

He gets a drink of water several times a day
Put your Safety Message
in his hand on an **AJAX CUP**



AJAX CUPS have a new and important story to tell you about employee morale and better health. Just drop a line to

And while drinking from his AJAX paper cup he is safe-guarding his health and enjoying a comfortable drink. Women workers prefer paper cups because they don't damage make-up.

Good housekeeping can be maintained, too, because the shape of the AJAX CUP encourages consumption of water at the fountain. It cannot be set down!

AJAX CUPS are easily disposed of right at the fountain. Use a swinging top waste receptacle or a waste basket.

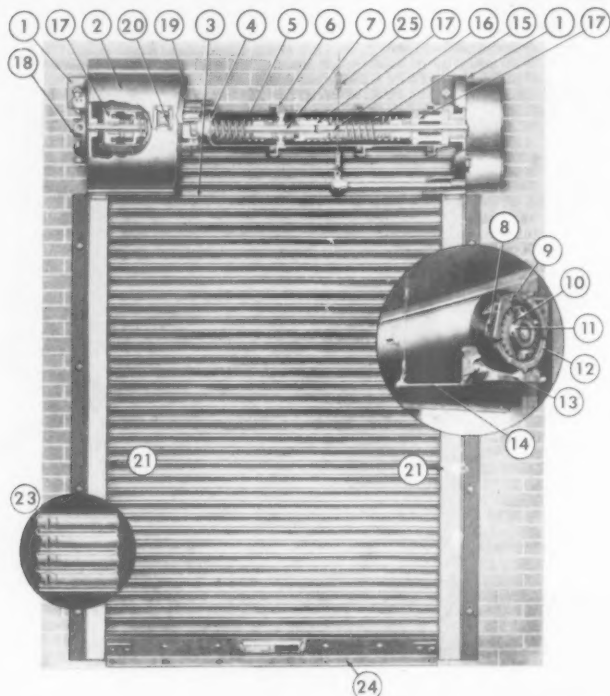
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offer 25-POINT FIRE SAFETY

Extra safety and efficiency are assured at every point of construction in "Akbar" Steel Rolling Fire Doors, product of the Kinnear Manufacturing Company, Columbus 16, Ohio.

Labeled by Underwriters' Laboratories, Inc., these automatic fire doors cut off drafts, block the spread of flames, confine losses to smaller areas. A starting spring assures quick, positive action when fire threatens. Another device controls their downward speed, for the safety of people passing underneath. Also, they may be opened

after automatic closure, for emergency exit. The doors remain coiled out of the way overhead when not in use.

Akbar Fire Doors can also be equipped for regular, daily service use, and with motor operation, if desired. (Regular non-labeled Kinnear Metal Rolling Doors are recommended where fire safety is not the major consideration.) Built to fit any opening, in old or new buildings. Write for details on the many safety and efficiency features of Kinnear "Akbar" Steel Rolling Fire Doors.

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hazards and the safeguards.

While some safety problems are common throughout all industries, every plant has its own variations of those problems, and others of its own. Because of that, it is important that safety lessons use illustrations made right on the spot, showing the actual conditions.

Obviously, any plant undertaking a safety program would first analyze its hazards on a basis of past experience, determining where, how, and why its most dangerous conditions exist. Then those conditions would be emphasized in its color slides.

In a machine shop, for instance, the photographs should show clearly the mechanical guards on the machines, how they operate, and what could happen if they were not used.

In a chemical plant, where the hazards might be fumes, or corrosive liquids, or explosive mixtures, the slides should show the necessity of always working under ventilating hoods when fumes are involved, of guarding against breakage or spillage when handling corrosive materials, and of surrounding reactions that may be explosive with barriers that will confine possible damage.

In virtually all plants there are hazards in the transporting, handling and storing of materials and finished products, and the color slides should demonstrate the proper methods of operating both hand and power trucks, and whatever other equipment is used in those activities.

There are dangers in offices, too, and secretaries, stenographers, file clerks and other office personnel should not be neglected in the safety lessons. They should be schooled in avoiding the common dangerous practices found frequently in many offices, such as climbing on a chair to replace a lamp bulb, opening windows in ways likely to shatter the glass, or scores of other actions that expose the individual or his or her co-workers to injury.

Fire is probably the most common of all industrial hazards and color slides can be used with great effectiveness in this phase of safety education, showing, particularly, proper methods of disposing of waste material, the necessity of ex-

tinguishing all matches and tobacco before discarding them, how flammable materials should be stored, and any special fire precautions that should be taken in the particular plant or department.

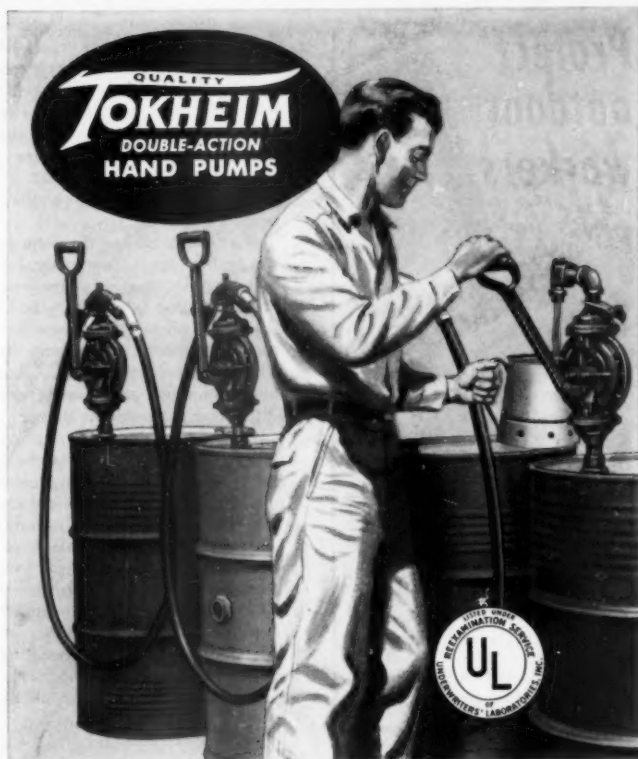
The best object lessons will be found in actual accidents, or in accidents that almost happened, but didn't quite. Because of that the safety engineer, or whoever is charged with handling the camera, should be ready at a moment's notice to go anywhere in the plant to take pictures. He will find that almost every photo he takes will have some value in teaching safety.

It may show how a warehouseman was hurt by falling material that had been improperly stacked, or how a lathe operator just barely escaped serious injury when the pocket of his jacket was caught in his machine, or how safety goggles saved the eye of a drill press operator when a drill broke.

This does not mean, of course, that it is necessary to wait for a plant accident, or a near-accident, in order to start building a file of safety pictures. Some photos will have to be staged anyway, such as the paired kind that show the right and wrong ways of doing things. Those can be used to demonstrate why a warehouseman should pull, rather than push, a handcart, or how to handle a ladder, or how to guard against spilling dangerous chemicals.

There are differences of opinion over whether color photos of extremely serious accidents, showing a good deal of blood and bad wounds, should be used to illustrate safety lectures. Some feel that they shock the audience so severely that they impair the effectiveness of the whole lesson. Others think that such shocks emphasize the safety message and impress it better on the memory. Each plant safety engineer will have to make his own decision about this.

It is assumed, of course, that the color slides are to be used in conjunction with an oral discussion by some member of the staff. Such a discussion can be recorded, punctuated by signals to the projector operator to indicate slide changes. This is a convenient way of giving a large number of



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lecture demonstrations with a limited staff. However, in general it is more satisfactory if the talk can be a live one. That not only avoids the impersonal nature of the canned lecture, but it enables the lecturer to give emphasis to anything that seems to require it, and especially to answer questions as they are raised.

With color slides, the lectures can be kept up to date easily, for revisions are simple and inexpensive. All that is necessary is to take some photos of the new features—buildings, equipment, or whatever they are—and add them to the slide file, at the same time discarding the outdated slides.

Color slides can serve many other purposes besides teaching safety, and this is an argument useful in justifying the initial expenditure for this equipment. They will be found useful in settling insurance claims, in substantiating claims for goods damaged in transit, in presenting evidence in court actions, in stimulating sales, or in recruiting personnel.

All in all, the 35 mm. photographic equipment and the file of color slides can pay big dividends in safety.

President's Conference

—From page 41

Mr. Dearborn stated his conviction that the decency and intelligence of the average American employee would respond to such an approach. He expressed no confidence in legislation as a means of getting compliance with safe procedures. He made a distinction, however, between the constructive efforts of safety men and government representatives to work out satisfactory safety codes and standards and the type of legislation which he characterized as "punitive."

Mr. Dearborn backed up his optimism about the possibility of progress in the small plant field by citing several examples of recent collaboration between the National Safety Council and associations whose members are mostly small employers. Much of his confidence in the approach to employers through their associations, he said, rests on the successful



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experience in safety enjoyed by many of the trade groups representing big business. (An adaptation of Mr. Dearborn's talk will appear in article form in the August issue of NATIONAL SAFETY NEWS.)

The Conference sessions each contained one or more "work shops," devices by which problems were presented by two or three persons from the platform, then discussed between the speakers and members of the audience. Microphones were placed in the aisles to facilitate the give-and-take. The question periods were necessarily limited in time, but they were used freely to question, to criticize, and, occasionally, to compliment. So far as it was physically possible to make it so, the Conference was a democratic affair.

The first work shop comprised a series of reports on some of the outstanding Governors' Conferences. Paul Gurske of the Oregon Industrial Accident Commission reported on his State's progress, with special emphasis on the

means taken to regulate the use of explosive-powered hand tools (stud guns). The use of the stud gun was demonstrated on the stage.

Robert Murray, of the Rhode Island Department of Labor, reported an annual saving of more than three and one-quarter million dollars through the reduction of the number of compensable injuries in the State, a reduction of 49.2 per cent in the five year period beginning with 1945.

Arvid Tienison, of the Illinois Department of Labor, reporting for his state, gave special mention to the wide acceptance of two new codes recently adopted in Illinois, one on construction safety and the other on the labeling of hazardous substances. Mr. Tienison noted that both industry and labor had been 100 per cent behind the passage of the labeling code.

On Tuesday afternoon three men representing associations gave their "success stories." Ivan F. LeGore described the accident prevention program of the Portland Cement Association, a pro-

gram of long standing and substantial success. Ray Ketchmark, Safety Director for the Folding Paper Box Association of America, told about his recent work in starting a new program with his own group. William M. Aicher of the United States Brewers' Foundation, told of the work of his Foundation in helping its members control their occupational hazards.

A work shop on the subject "How can labor unions increase their safety services?" attracted considerable discussion from the floor. Describing the safety work carried on by labor unions were Boris Shishkin, of the American Federation of Labor, Harry Read, of the CIO, Hunter P. Wharton, of the International Union of Operating Engineers, and John L. Crull, Vice-President of the Communications Workers of America.

In the question and answer period, the chief discontent in the audience seemed to be with the speed — or lack of speed — with which industrial management was putting good safety programs into effect. Some delegates demanded

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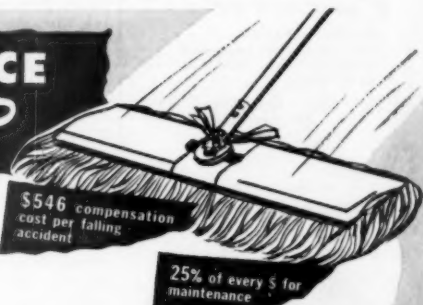
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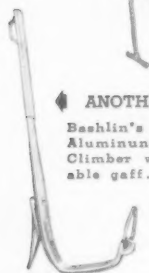
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immediate legislation, Federal legislation if necessary, to improve working conditions. The four members of the symposium, however, seemed less inclined to rely on legal process. As Mr. Read said, he could not contribute to the current "sweetness and light atmosphere" of the Industrial Conference. He apparently felt that more could be accomplished by management and labor initiative, and particularly by collaboration between management and labor.

Nothing underscores failure quite so well as success. To those delegates at the Conference who have been struggling with the ABC's of safety in restaurants, print shops, hotels, little machine shops, laundries, and the like, Mr. Anderson, Vice President of General Motors Corporation, seemed like a visitor from another—and more enlightened—world. The accomplishments of General Motors Corporation in accident control—and the assumptions on which those accomplishments were made—comprised a body of solid fact which lifted the whole business of safety out of the realm of wishful thinking and put it within reach of anyone who wants to grasp it. Mr. Anderson—and Mr. MacDonald, who followed him—offered proof that the safety job can be done, and showed how to do it. (Condensations of both Mr. Anderson's and Mr. MacDonald's talks appear elsewhere in this issue.)

Presumably because of the Supreme Court decision of the previous day, Mr. MacDonald, who is Assistant to the Chairman of the Board, United States Steel Corporation, could not present his paper personally. However as presented for him by Edward C. Logelin, Jr., Director of Public Relations for U. S. Steel's Chicago District, his paper stated the pressing need for good public relations programs, programs which would give the accident prevention efforts of an employer its due in the public eye.

Of particular interest was Mr. MacDonald's account of the reaction of the public to safety messages given in conjunction with "The Theater Guild on The Air" radio program. Contrary to the

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general opinion that safety has no glamor, when George Hicks delivered a safety message it was found to have a wide audience. Hundreds of letters came from all parts of the country, asking for copies of the booklet describing the United States Steel safety program.

Doubtless because government is the largest employer of labor, and because government performance in accident prevention has as yet made little significant progress, Milton M. Bowman, Commissioner of Employee Accident Control for the City of Cleveland, and General Chairman of the Public Employee Section, National Safety Council, was given an opportunity on the program of the Conference to describe the situation.

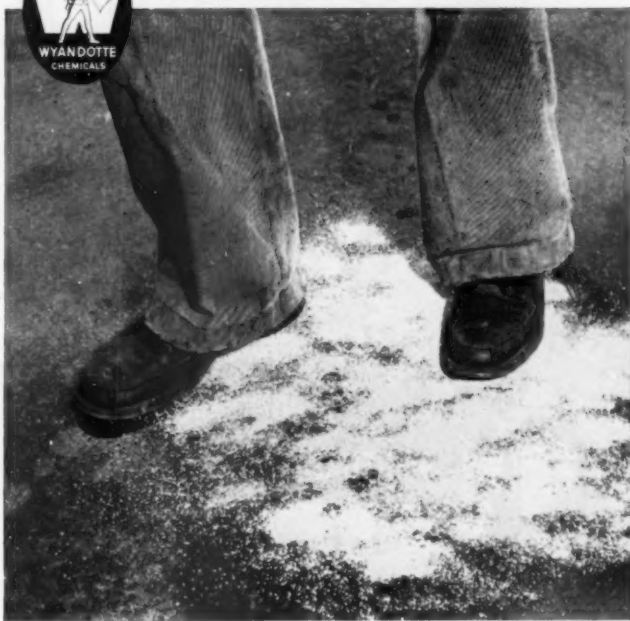
He did not find it good. Although the Federal Government, and certain of the armed services, have well organized accident prevention programs in effect, the job hazards of several million public employees are, by and large deplorable. A handful of State Highway Departments do a good safety job—good by any standards. Most State Highway Departments, on the other hand, have extremely high injury experience. Several do so little about safety that injury records are not even kept on a standard basis.

The safety situation among municipalities is not much better, said Mr. Bowman. Not more than a dozen cities keep frequency and severity figures, according to the A.S.A. Standard Code. These cities may be presumed to do more by way of safety for employees than do most cities of the country; nevertheless, the average injury frequency of the employees of these "safety conscious" cities is approximately three times the rate reported to the National Safety Council by large private employers.

The only optimism that Mr. Bowman was able to express lay in the increasing activity of the Federal Safety Council and in the voluntary efforts of the State Highway Department and municipal people who are spark-plugging the efforts of the Public Employee Section of the National Safety Council to co-ordinate safety work on the state and municipal level throughout the country.



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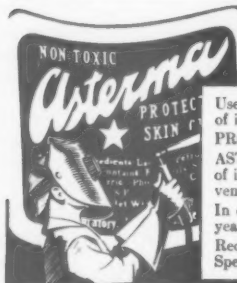


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Safety is Good Business

—From page 20

Safety Council has been holding annual safety conferences since 1912 and attendance now runs into the thousands. These people are interested in farm safety, industrial safety, home safety, highway safety, school safety, etc. Through the Council the conference approach has been developed to a very high degree of effectiveness.

All of these approaches — the alarmist approach, the legislative or compulsory approach, and the conference approach—leave something to be desired. There is another approach which, in my opinion, is far more important than any of these we have discussed. The experienced manager knows it is good business to accept safety as a management responsibility. The good business approach is more effective than others because it has its origin, and is carried out, where the work is done. It builds safety into the machines, the tools, the processes, and the relationships at the work place. It has continuity—it makes safety a part of each operation and keeps it that way every day of the year. It's an incentive approach because it rewards a good safety record in a very tangible way, and, in addition, provides intangible benefits as well. It gives full opportunity for research and the development of new ideas.

The Joint Industrial Conference formed in 1945 is one example. The major automotive companies, machine tool builders, and industrial equipment users were brought together to discuss new and improved methods of building and installing electrical, hydraulic and pneumatic components on machine tools. The standards which resulted from this cooperative effort were not required by any law. They came about because of the initiative taken by private industry. They were established on a professional basis to reflect the best available experience and practices. Those standards have resulted in greater safety for employees, but they have also meant uninterrupted production, longer life of equipment, and reduced maintenance.

One of our plants developed a method for guarding small presses which proved better than anything else used up to that time and has been adopted throughout our plants. It involves the use on small presses of a grille-type guard individually designed for each die. This makes it practically impossible for the operator's hands to come between the dies. One of our divisions with some 700 small presses has been using this die-guarding program now for nine years, and over this entire period has had only one serious injury, and that was back in 1944—over eight years ago. Certainly it costs money to install these guards, but not a large amount. The important thing is that the hazards incidental to small press operations have been practically eliminated. At the same time, instead of loss in production there have been substantial gains. This program for the protection of employees has paid for itself many times over.

We have another General Motors division with 900 large presses that were loaded and unloaded and operated by hand. We had been using control buttons but every once in a while something went wrong and we had a serious injury. Several years ago a policy was adopted which prohibited any part of the body being put between the punch and the die. If no part of the body came between the punch and the die, we'd have less chance of injury even if for some reason the press were operated unintentionally. To put that policy into effect required changes in the design of dies, additional locating pins, knock-out pins, and other modifications. It required the development of loading and unloading devices, gravity slides, hydraulic and pneumatic lifts for loading and unloading, and mechanically operating hydraulic and pneumatic kick-outs. The efforts did result in keeping fingers, hands and arms out of the danger zone. The safety record is much better; the division has worked nearly 8 million man-hours without a single lost time accident on over 2100 presses, both large and small.

But that's only part of the story — all the changes made to insure greater safety also brought

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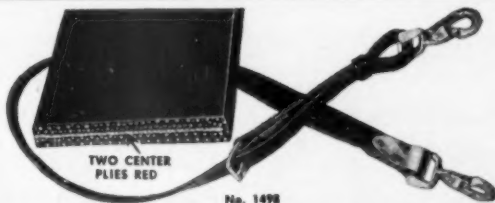


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an increase in production and a decrease in scrap. By keeping arms, fingers, and hands out of the danger zone, it was found that presses could be run *continuously*, instead of intermittently. They could be run at a slower rate and still produce more pieces per hour. Reducing the speed reduced the number of panels spoiled by breakage. That gave us a saving in material. The changes made reduced maintenance on drive motors and clutches. Starting with the objective of improving safety, this division at the same time increased efficiency and cut costs.

Since 1947, Oldsmobile has had a 100 per cent eye protection program. That means that every employe and every visitor wears safety glasses at all times while in any part of the plant. You may have seen newspaper pictures of General and Mrs. MacArthur being conducted through our Oldsmobile plant by C. E. Wilson, president of General Motors. If you did, you noticed that the General, Mrs. MacArthur, Mr. Wilson, and everyone in the party, were wearing safety glasses. Over this period of five years there have been just two serious eye injuries. Both were caused by the fact that, contrary to instructions, the employe had removed his safety glasses, and contrary to general practice, his foreman had not detected it in time. During the same period, 36 employes' eyes were saved from serious injury by the safety glasses they were wearing.

These examples show that safety pays in a tangible way. But safety is good business in an intangible way as well. Employes like to work in safe plants. Morale is better, there is more cooperation, and there is greater efficiency.

Our employes are safer while they are in our plants than they are when they are away from work. We have the figures to prove it. Practically all of our employes are covered under the General Motors group insurance policy which has benefits for lost time from work because of non-occupational accidents. In this way we have a record of the non-occupational accidents as well as occupational accidents.

Over a recent 12-month period,

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for each 1,000 employees, 22 lost time because of non-occupational accidents and only 4 lost time because of occupational accidents. This is a ratio of five to one. When we compare the more serious accidents the ratio is even higher. This does not indicate, however, that General Motors employees have a bad safety record in their off-the-job activities. Figures published by the National Safety Council show that for all workers, the off-the-job accident rate is just twice as high—44 per thousand employees per year.

If there are some businesses which have not done all they should to provide for the safety of their employees, then I would like to suggest that we try to motivate them through the use of this businessman's approach. Let's preach a little more of this gospel that safety is good business. Let's see that they clearly understand the incentives and rewards of a good safety program.

I think it has been a mistake to rely so exclusively on the negative approach—to talk about how bad things are. Why are we afraid to say how good things are? Why don't we point out the improvement we have been able to bring about in safety records over the past 25 years? Is it a bad thing to emphasize that in the automobile industry the frequency rate was 9.5 in 1947 and was brought down to 6.2 in 1951? That was an improvement of some 35 per cent in 4 years.

In General Motors we take pride that our employees in 1951 made the best safety record in their history, and that we received our 8th Award of Honor from the National Safety Council. Our company has reduced its accident rate by more than 50 per cent since 1947. Such a record isn't brought about by scaring people through the use of alarmist approach or through compulsion. It only comes about because those responsible in American industry have responded to the incentives of safety. They have a real interest in the safety of employees from a humanitarian point of view, and they also recognize that safety is good business.

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First, in making these goggles, came Safety: protection against injurious light rays from front and sides . . . and against flying particles; easy adjustment for proper fit, in goggles and in headrest.

Comfort came next. Properly adjusted, they bear gently against the face. Weight is evenly distributed about the head. One hand, a few seconds, and they are raised or lowered. Lightness too makes for comfort. At eight ounces, these headrest goggles are the lightest of their kind on the market.

For Gas Welding, Cutting and Brazing, with lenses in F.S. shades 3 thru 6; types W-50, LTB-50 and BX with headrest, type WR-50 with elastic band.

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Handling Magnesium

—From page 60

ports provided for this operation. The reason for this precautionary measure is the fact stated before that magnesium reacts with most metal oxides and with iron oxide it could react explosively. Now in case a pot breaks or begins to leak heavily, an accumulation of scale in the furnace bottom would

provide a dangerous situation. If no scale or only very little is present, no danger exists.

Loading the leaking pot heavily with flux will cause flux to leak rather than metal, or you may "freeze" the metal in the pot by adding cold flux and metal—both good safety measures. To prevent pot breakage, the pots are removed every week from the furnace and thoroughly cleaned. The scale is

removed by hammering. The pot is then inspected for defects and its wall thickness is measured. If the thickness has decreased to one-half the original, the pot is discarded.

Since all magnesium used has been handled at least twice in the liquid state and since we are using thousands of tons of magnesium yearly, many people have learned to handle the liquid phase quite properly. It is necessary only to recognize the characteristics of this metal and to use common sense and the few special precautions dictated by the metal.

The liquid metal or alloy is cast into ingots for the foundry or into billets for the rolling mill, the extrusion process or the forge. For extruding and forging usually round billets are poured. But for sheet and plate rolling flat billets are poured. This pouring may be done with a hand ladle, with a tilting furnace or the metal may be pumped into the molds. In any case, the molds are filled first with an inert gas, usually sulfur dioxide, and the metal is then poured replacing the gas in the mold. In this manner, oxidation has been stopped during the pouring process. During solidification the billet or ingot casting is kept in sulfur dioxide atmosphere or sulfur and boric acid is dusted lightly over the surface exposed to the air. The burning sulfur will form sulfur dioxide and prevent oxidation.

Ingots obtained in this manner will go to the foundries to be turned into castings. There are three common casting processes in use today. They are sand-casting, permanent mold casting, and die casting. Each of these processes has its particular application which usually is determined by the complexity of the casting design and the economy of the processes. Mass production of a fairly simple design and relatively small dimension will call for die casting. Very complicated and/or large castings of which only relatively few are needed certainly demands sand casting. Between these two extremes permanent mold castings find a very good application. Permanent mold castings also are mass fabrication products.

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Dies and permanent molds are made of steel and iron respectively. In the first method, the die casting, magnesium is poured into the die at high speed and high pressure, i.e., pressures of 2000 lbs., p.s.i. or more and speeds of 200 ft/sec. or more. The metal is cast at low temperatures, usually below 1200°F. Since magnesium does not attack steel, no reaction occurs between the die and the metal. The metal shot into the mold freezes instantly.

With magnesium, as with all metals in die casting, precaution must be taken that metal which may be forced out of the mold during the initial shot does not injure personnel. The wearing of face shields or goggles and gloves is necessary and flash shields must be provided as usual. Since pouring temperatures are very low, the metal shows very little tendency to burn. The metal in the holding furnace is protected by sulfur dioxide gas.

Pouring of permanent mold castings depends on gravity. The filling of the mold cavity therefore is much slower than in die casting. Permanent mold castings are usually much larger in section thicknesses and much heavier in weight than die castings. The metal usually is poured at higher temperatures in order to fill the mold. All these factors require a neutral atmosphere for the metal—again sulfur dioxide is used. Before each pouring the mold is filled with sulfur dioxide gas which is heavier than air.

Since the alloys for permanent mold castings are cast at a temperature usually higher than 1250°F they are protected from oxidation in the furnace by flux rather than by sulfur dioxide gas. To prevent flux contamination of the castings, the metal is handled in a bottom pour or special ladle. Contrary to the die casting practice, the cavity of the permanent mold is coated with an insulating paint or wash. This is used primarily to regulate the heat flow from the metal to the mold. Logically, it does not react with the metal. As soon as the metal has solidified, oxidation or burning possibilities have stopped.

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two casting processes the metal has no opportunity to react with the molding material. In sand casting, however, this possibility is quite real. Usually the molds are green sand molds, i.e., they contain 3-5 per cent moisture. The moisture will form steam with the hot metal, the steam will be decomposed by the metal, and the hydrogen liberated can form explosive mixtures. Magnesium can react with the sand in the sand mold and form silicon or magnesium silicide under the liberation of considerable heat.

It is necessary to prevent these reactions and it is quite possible to do so by the addition of inhibitors to the molding and core sand mixtures. These inhibitors usually are ammonium fluoride, boric acid and sulfur and similar compounds. Diethylene glycol is used to replace part of the water. With these inhibitors present in proper amounts, the green sand mold offers no more danger than any other metal poured in green sand. Again, to prevent rapid oxidation or burning of the surfaces of sprues and risers which are exposed to the air, these are sprinkled with sulfur flour to exclude the atmosphere.

There is one more process in which liquid magnesium is used and the process is welding, arc, gas or electric resistance welding can be used. Magnesium is mostly arc welded in a protective atmosphere of helium or argon gas. The materials which are welded together generally are of considerable volume or area or both and, consequently, carry the heat of the electric arc away fast enough so that metal outside the area of protection of the gas never reaches a temperature at which it could ignite.

As in heliarc welding, the only protective devices necessary are those common in any welding, i.e., welders are trained to handle magnesium and shields between welders protect them from light and flashes created by welding. The liquid metal is the metal in the head and as stated before, it solidifies rapidly. Spot welding also is done but the temperatures are never high enough for ignition.

Magnesium castings often are

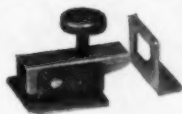
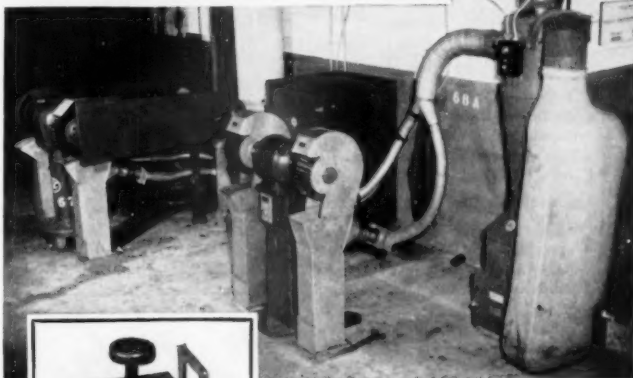
heat treated either to enhance their properties or they are annealed to be processed into wrought materials. In both cases the metal is brought up to high temperatures in furnaces. Because of segregation in composition it may be possible to cause slight incipient melting of eutectic. If the furnace atmosphere is not protective the castings or materials may start to burn. Again sulfur dioxide is used for protection. Sulfur dioxide controls constantly check the concentration. Carbon dioxide also can be used but it appears to be slightly less effective and more costly.

If the temperature control does not function properly, it is possible to melt the castings in the furnace and then fires are possible. This occurs rarely since double controls are used. If it should happen, it is necessary to kill the fire with G-One powder or flux and let the mixture cool off in the furnace. It may mean a new furnace lining and new heating elements but beyond this there is no danger greater than molten aluminum alloys in a heat treating furnace.

The Dow Chemical Company recently reported that boron trichloride gas is a better extinguisher of magnesium fires in heat treating furnaces. Research experiments indicated its effectiveness and the actual test in a 1000 lb. magnesium fire confirmed that it is better than G-One powder. When magnesium burns in a furnace, it is flooded with boron trichloride gas with the furnace fan on to insure good, even distribution. Adequate precaution has to be taken not to get exposed to boron trichloride gas. Although it does not appear seriously injurious to health, it discomposes into hydrochloric acid and boric acid fumes.

Finishing products may involve a number of operations not mentioned above. In some of them heat again is applied to the material but in general the temperatures are much lower and usually of shorter duration. To mention for example, deep drawing, press breaking and forming, stress relieving, and stabilizing which for magnesium require temperatures of up to 600°F. Paint baking also applies heat to the product but in

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each case the temperatures are so low that there is no danger of ignition.

Castings, extrusions, sheets, plates and other shapes are subjected to sawing, grinding, routing, shearing, boring, trimming, and other similar operations in which material is removed in the form of chips or even finer particles such as dust. The smaller the particle, the greater is its surface. This large surface can oxidize very rapidly, and if properly sus-

pended in air may even cause explosions. This is true of any combustible dust.

It is therefore important to prevent any accumulation of fine magnesium particles. An example is in grinding. Care must be taken that the grinding leavings are collected in water constantly. The collectors have to be cleaned daily. If the proper wet collection system is not available, the only safe way to grind magnesium is to grind it in water or wet.

Chips as produced by saws,

drills and other similar tools are not an explosion type hazard, but still a substantial fire hazard. In all cases sharp tools and heavy cuts are the safest way of machining. No water or water solution cutting compound can be used. If any coolant is necessary oils should be used. Turnings or borings may be ignited by a spark, a cigarette, or the like. Therefore, smoking must be prohibited in these areas.

Areas in which machines produce chips must be cleaned frequently and thoroughly. The chips are put in covered metal drums and stored outside buildings. Fine particles and grinding dust should be disposed of as soon as a drum is filled, fine particles by burning and wet dust by burying or by drying in a magnesium fire and burning.

Large turnings and borings or scrap of this order also are handled in tightly closed steel drums. As long as they are kept dry they are safe. These can be sold to competent smelters to be remelted and salvaged as all larger magnesium scrap pieces.

In all these operations in which fine particles of magnesium are formed, it is best that the worker and personnel in the department wear safe clothing. Proper clothing is the kind to which dust will not stick, into which dust will not penetrate, and which does not have folds like cuffs or pockets in which dust or chips may accumulate. Hard surface clothing then is recommended. Caps should be worn so that the hair does not become filled with magnesium dust. Frequent thorough cleaning of all clothing is highly recommended. Also, the clothing worn should be so designed that it can be taken off quickly.

Water is not used for magnesium fire fighting. The main reason for this is the fact that water poured on burning magnesium usually infuriates such fires up to explosions. The reaction which occurs explains this behavior. Magnesium (burning) plus water gives hydrogen and magnesium oxide. Hydrogen in proper mixture with oxygen is very explosive. This same reaction occurs when finely divided magnesium dust gets wet—it corrodes rapidly

Ladder Safety

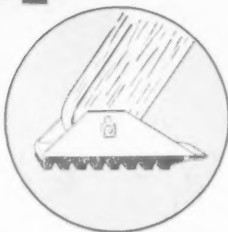
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under development of hydrogen and heat. At proper conditions the mixture will ignite spontaneously and a fire has started.

If a large amount of water covers the dust, as in wet grinding, there is no danger. Also, if large amounts of water could be thrown instantly on burning magnesium to quench the fire and cool the hot magnesium below the melting point, no danger would exist. It is very seldom that so much water is available so it is much safer not to use any. The best method is to use powders, fluxes, or even dry sand and dry, clean iron filings. The main object is to smother the fire by separating the magnesium from the oxygen supply of the air.

Since burning magnesium does not develop toxic fumes, it is safe to go into the room in which magnesium burns and to remove either the burning magnesium with a dry shovel or to remove the magnesium around the burning part and let the fire burn itself out or kill it with sand, G-One powder, etc.

Magnesium properly handled poses no more of a fire danger than many other metals or materials. Magnesium is safely handled if its characteristics are known to the people handling it. The few basic safety rules must be vigorously enforced. Fire fighting must be taught to the supervisory staff and to the men in critical areas. The proper equipment must always be available and handy. Good housekeeping, though, is always the best means of fire prevention.

Air Pollution

—From page 57

their source or sources have been identified. It will be necessary, then, to know the variations in concentration in the community from day to night, and with various meteorological conditions. This information should then be correlated with the amount of the contaminant being discharged into the air, the meteorological conditions, and the contaminant concentration which is found to be objectionable to the community.

Sampling methods and analytical methods have been described for most of the contaminants en-

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countered in industrial atmospheres (6, 7). Knowing the nature of the contaminant, its approximate concentration, and particle size, suitable sampling and analytical methods may be selected (4, 5).

Reducing Contaminant Level

Having identified the contaminant or contaminants and their sources, the level of air pollution in the community can be reduced only by studying each plant individually. The most economical method for reducing the contaminant level will be different for different plants, depending upon many details.

In some cases, the contaminant will be separated from the effluent gases and disposed of as a separate operation. There are many methods for this purpose (21, 22): liquid washers, mechanical and centrifugal separators, both wet and dry, baghouses, and other filtration units, agglomerators, adsorption units, incineration units of various kinds, electrostatic precipitators, tall chimneys, and others. Among the most recent newcomers are special filter paper for very fine particles, steam condensation to increase the effective size of fine particles, and high-temperature baghouses. In many cases, research work has found a commercial use for the material separated.

When the conventional methods of reducing the contaminant concentration are costly, or do not give a satisfying result, it even may be necessary to find a new method for manufacturing the product which will not contaminate the atmosphere. The result of many such programs is a more economical process, especially when the cost of preventing air pollution is included. Each plant presents a different set of conditions and must be studied individually to determine the most economical method.

The Community Phase

Can a community legislate clean air? Obviously, the answer is no. Passing a law alone will never produce clean air. Only by the cooperative efforts of industry, local government, and the community at large, can a reduction in contaminant concentration be ob-

tained. Each segment must do its part. Both the citizens and industry must give the air-pollution-control officials their enthusiastic cooperation to make the program a success.

In carrying out a program to clean up the air, the public-relations portion of the program is very important. The public should be told what is being done by industry to improve conditions, and how much it is costing. This will help convince the individuals of the importance of carrying out their part in the cleaner-air program.

Who pays for cleaning the air? It is evident that the public really pays for the cleaner air by paying higher prices. For this reason, the public has an interest in the efficiency of the cleaning system, and should not insist on unrealistic standards for industrial areas.

Maintaining Cleaner Air Standards

For many years, the air has been able to handle the unwanted constituents of our industrial era. It is quite evident that the concentration of industry in certain areas and the development of new industries have brought about conditions under which the air is not able to disperse these airborne contaminants satisfactorily. Steps must be taken to correct this condition. The excellent work of the MCA Air Pollution Committee is a recognition of this fact.

An important phase of future process development will be a study of the contaminant concentrations in the effluent gases and their dispersion in the air. In evaluating and comparing new processes, the cost of cleaning or purifying the effluent gases should be considered as part of the operating cost of each process.

In selecting new plant locations, consideration must be given to the handling of effluent gases to prevent air pollution in the community. This will include a study of the topography of the plant site and the meteorological conditions prevailing during various seasons of the year. Techniques for these studies are available. The farsighted industry will take advantage of them to minimize this type of trouble in the future.

Summary

Complex air pollution problems are usually associated with population centers. Air pollution affects the health, comfort, or use of property. To reduce air pollution, it is necessary to identify the contaminants and their sources, determine their concentrations, and study individual plants for economical methods of reducing the contaminant concentration.

Equipment and methods are available for measuring some contaminant concentrations continuously and all contaminants by short-time sampling procedures. Directional samplers indicate the wind direction when contaminants are collected. Kite-balloons make possible studies in the lower atmosphere. After the contaminants and sources have been identified, each individual plant must be studied to determine the most economical method for reducing the contaminant concentration. Many methods are available. If none is satisfactory, a newly developed process may be the economical answer.

Cleaner air will result only from cooperative community effort. Since the public pays for clean air, it must be realistic about the standards maintained in industrial areas. In planning new processes and plants, the farsighted company will consider air pollution and use modern techniques available for studying this problem.

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23. Harris, W. B., and LeVine, H. D., "Some Techniques and Equipment for Trace Quantity Sampling of Industrial Aerosols," U. S. Atomic Energy Commission, NYO 1534.

24. Private communication, George Clayton, U. S. Public Health Service, Cincinnati, Ohio.



Employee Booklet on Health

The Industrial Department announces the publication of a 16-page employee booklet entitled *Down Time*. Printed in two colors and cleverly illustrated, the booklet presents the simple rules for maintaining good health.

For mailing to workers' homes or as a payroll enclosure, *Down Time* is an attractive and inexpensive way to remind employees and their families of the fundamental rules for staying healthy.

Member prices: 1 to 9 copies 12¢ each. Write for quantity prices.

Operation Safety

"Let's see some signs of life around here!"

You hear it every day in shipping rooms, on the line, in any of the departments of a bustling industrial plant.

Operation Safety, the National Safety Council's monthly kit of community traffic safety education materials, has a slant on "Signs of Life" that can mean worthwhile man-hour savings for management.

"Signs of Life" is the August theme of Operation Safety, and the kit—devoted to life-saving ideas based on the importance of knowing the shapes of the familiar highway traffic signals and what they mean—can be readily adapted to off-the-job safety training.

The "Signs of Life" message is backed up with materials that can be used conveniently in any plant. Radio message for plant intercom systems, news articles for plant papers, leaflets for distribution through pay envelopes, films for plant showing—although aimed at community use, all are equally usable in industry.

Operation Safety leans heavily on posters as a means of getting

across its monthly themes. Industry might well use these effective attention-getters in its program of off-the-job safety by erecting poster boards at entrances to plant parking lots, as well as by using these bright posters throughout the plant. A typical poster is shown here.

The use of poster boards at parking lot entrances has proven most effective in educating workers for off-the-job safety. Such boards and posters get the attention of workers coming and going, thus providing a double impact.

Samples of Operation Safety and other materials and complete information may be obtained from the National Safety Council.

New and Revised Safety Instruction Cards

Three new Safety Instruction Cards have been published on logging operations: 783—Bucking with Power Chain Saws, 784—One-Man Power Chain Saws, 785—Power Chain Saw Operators.

Six other cards are revisions of previous cards on logging operations: 786—Log Hauling with

Trucks, 787—Logging Tractors, 788—Operating Logging Tractors, 789—Loading Logging Trucks (Precautions for Truck Drivers), 790—Loading Logging Trucks (Precautions for Loaders), 791—Log Skidding with Tractors.

Member prices: 1 to 9 Safety Instruction Cards (same or assorted titles), 5¢ each. Write for quantity prices.

Revised Data Sheet on Chain Saws

Data Sheet D-W, 12, *Portable Power Chain Saws*, has been revised and new pictures have been added. The most common hazards of power chain saws are discussed in detail and the safe practices necessary to control them are described. This data sheet will be of value in such industries as logging, electrical utilities and wherever else power saws are used.

Member prices: Data Sheets, 1 to 9 copies, 17¢. Write for quantity prices.

Three New Reprints

Safety Reprint General 33, *How to Write a Safety Manual*, is an 8-page illustrated discussion of the problems the safety man must face if he wishes to prepare a safety manual for his plant. The paper is divided into two parts, the first of which treats the problems of writing the text for the manual and the second discusses the problems of producing the finished book.

Safety Reprint General 32, *Keep Blasting Caps Away from Radios*, cautions against storing or using blasting caps in areas charged with radio frequency energy, as for instance near portable radio transmitters. The discussion is brief and to the point.

Safety Reprint General 37, *Death to Pests*, presents a fairly comprehensive survey of the use of pesticides. Spot and area spraying are both discussed.

Prices of safety reprints vary with number of pages. Write for quantity prices.

The desire to appear clever often prevents our becoming so.
—La Rochefoucauld.

ALERT TODAY



ALIVE TOMORROW

NATIONAL SAFETY COUNCIL

T-9534-C

25x38

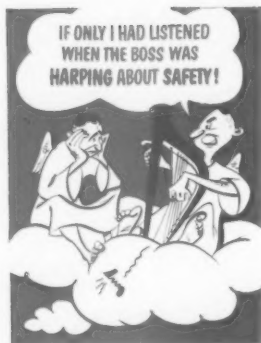
safety

occupational
**SAFETY
POSTERS**

POSTERS



MAKE THE MOST OF IT!



9641-C

25x38

Above new "C" poster, issued monthly, is indicative of the other two color posters—shown in black and white on the following pages and in the 1952 Poster Directory.

THE 1952 Directory of Occupational Safety Posters contains miniatures of 744 posters which are in stock. *These are top-notch selections on a great variety of subjects.* Copies of the Directory have been sent to all National Safety Council industrial members. Additional copies are available at 50 cents each—write to Membership Dept., N.S.C.

Posters miniaturized on this page and the two following are **NEW**—produced for the first time this month. Excepting the Jumbo poster (below, left) all will be in stock throughout 1952—the same as those previously published in 1952 issues of the NEWS. The posters shown in black-and-white on the two following pages are actually printed in two or more colors.

MAKE THE MOST OF YOUR POSTER SERVICE by selecting from the brand new posters shown on these pages each month and from the hundreds of illustrations in the 1952 Directory.



JUMBO POSTER for AUGUST, 1952

The Jumbo poster, issued monthly, is designed for outdoor use and is available to members on annual subscription but is not stocked. Its actual size is 9' 11" by 11' 8".



9623-A

8 1/2 x 11 1/2

This new four color poster is illustrative of the 72 four color posters shown in the 1952 Poster Directory.

Electrotypes of poster miniatures on this page are not available, nor can payroll inserts be supplied.

Posters below are printed in two or more colors
(Available only in sizes indicated)



9580-B

17x23



9542-B

17x23



9634-A

8½x11½



9584-A

8½x11½



9582-A

8½x11½



9620-A

8½x11½



9625-A

8½x11½



9633-A

8½x11½

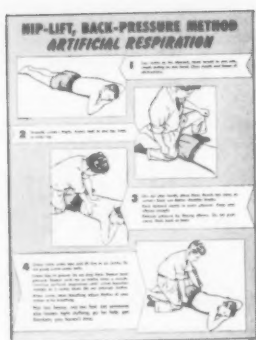


9622-A

8½x11½

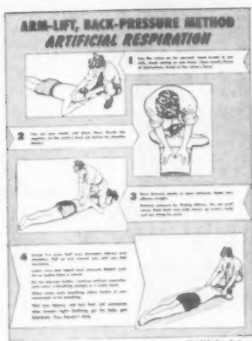
Electrotypes of payroll inserts can be furnished on all poster illustrations shown above.

Posters below are printed in two or more colors
(Available only in sizes indicated)



9596-B

17x23



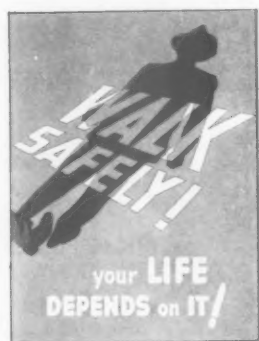
9593-B

17x23



9624-A

8 1/2 x 11 1/2



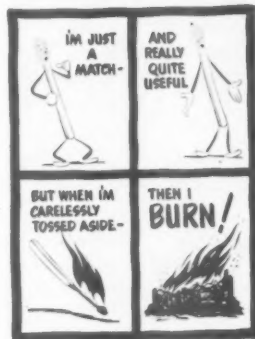
T-9555-B

17x23



9626-A

8 1/2 x 11 1/2



9519-B

17x23



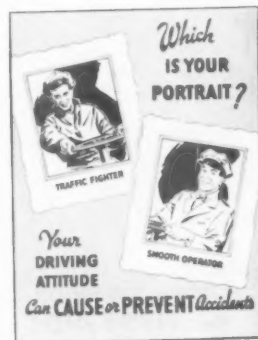
V-9629-B

17x23



V-9630-A

8 1/2 x 11 1/2



V-9628-B

17x23

Electrotypes of payroll inserts can be furnished on all poster illustrations shown above.

Change of Command

—From page 33

charge of manufacturing who knew he was being judged by short-run costs, not long-run improvements, would buy. Every blasted thing I thought this company would do, as long as it was in a panic because it might have to tell you that it wouldn't make an income large enough to pay what you've come to consider a normal dividend."

Jackson was seated now, tapping his glass desk top in irritation, looking for an excuse to change the tap to a pound. I went on.

"I know the cost of what we ought to do won't make the difference between what you consider an adequate and an inadequate profit. But it would cost money, and you've scared the management of this company into a frame of mind that won't let it spend, even when spending is clearly justified."

Jackson growled, "So you think my over-all direction of the company is incompetent?"

I shook my head. "I didn't say that. You built a good management group. In 1919, it looked like it made sense to put a salesman into the presidency. It looked like a weak market, a slumping market. So Joe Roscoe was a natural selection.

"Now you've put Larson in—a stronger man, a production-minded, cost-minded man, a leader, not a salesman. I think you did the right thing.

"But you are a strong-willed man, an emotional man. You can inspire some people to better work, more intelligent planning. But there are also some people you can scare into a bad case of jittery inactivity."

He liked that. Another boss might have been furious, but not Jackson. He knows he scares people, and he enjoys it. He barked, "Are you the kind I don't scare?"

I shook my head. "No, you can scare me. You can't panic me, but you can scare me. I lost a good assistant in the last year, partly because I was buffaloed into pennywise cost cutting. Yes, I scare. My second child was born a month ago, and I like my job.

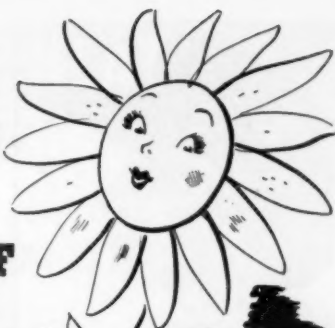
Be fresh... stay fresh

wear Cover's FOG-PROOF GOGGLES

Famous "Nod & Shake" Type

Used by thousands, for years, to protect eyes against gases, dusts, fumes, smoke, paint spray. Can be worn with any make respirator. Frames are of soft, pliable rubber that give air-tight fit on any shape face. A few drops of water placed in patented groove keeps fog from forming on inside of single lenses. An easy nod and shake of the head keeps lenses clear indefinitely.

Sample \$200⁰⁰
sent



H. S. COVER, South Bend, Ind.

WHERE FLOORS ARE WET

stop accidents with
TRAFFIC-TRED



The new, long-wearing, low-priced, corrugated perforated floor matting. Also an ideal scrapeage mat. Comes in rolls 7/16" thick and 24", 36" or 48" wide.

AMERICAN MAT CORPORATION

"America's Largest Matting Specialists"

1724 Adams Street

Toledo 2, Ohio

Please send literature and prices on Traffic-Tred.

Name _____

Firm _____

Street _____

City and State _____

IN CANADA: American Mat Corporation Ltd., Canada Trust Building, Windsor, Ontario.



For Safety
Guard-Ann Hat
U.S. PATENT NO. 2,538,888

Combines utmost protection and style. Exclusive patented features found in no other hat.

Write for Free Sample or Order Direct from us

\$15.00 dz.

CHIC MAID HAT MFG. CO., Inc.
630 HIGH STREET
BUFFALO 11, N. Y.

WHEN THE HEAT GETS YOU **HAV-ALIFT**



It's common fact that excessive sweating slows down the body's normal processes. To alleviate this condition and restore production to normal, place a HAV-ALIFT Dispenser near the water cooler.

HAV-ALIFT Regulated Salt Tablets will prevent nausea and digestive disorder which might occur by taking plain salt tablets.

HAV-ALIFT comes in 750 and 1,500 Dispensers with either plain Salt or Salt and Dextrose tablets.

For further information, write

A. E. HALPERIN CO., INC.
75 NORTHAMPTON STREET
BOSTON 18, MASS.

so I scare."

"Good!" said Jackson.

It was like a slap in the face when you don't expect it. I had no comeback. The boss went on,

"I want you scared. Not scared to ask for money. Not scared to make big plans. But scared of failure—and failure for you is accidents. Make your plans big, sell them hard, and stop accidents. That's all I want!"

I looked up into his hard face, saw that it was not angry. "Do you mean," I said, "that the safety department has a blank check to spend for safety?"

He laughed—loud, gay, old-man laughter, the only truly ringing laugh I'd ever heard from him. "My boy," he said, "I'm old, but I'm not senile. I don't write blank checks. If you think I'll buy, sight unseen, every brainstorm of a staff specialist, you are more stupid than I think. No, you haven't got a blank check. You'll have to clear every blasted increase in budget, and your justifications for increases will have to be powerful.

"All I'm saying to you, and this I'm saying in dead seriousness, is that I expect you to ask for and justify what your program needs. I'll decide whether you get it. What I'm doing is knocking the props out from under any alibi you may have had so far about the front office's blocking you from even recommending a sound policy. I want your advice—full, free, straight. I'll decide whether to take it."

That afternoon, Larson called me in to his new office, the broad desk stripped of Roscoe's brace-brac, bare now except for a production flow chart, a slide rule and a cheap mechanical pencil. He offered me a cigar, and we talked aimlessly for a couple of minutes. Then he said:

"Jackson asked me about you. I told him I liked you. He asked where you belonged in the organization. I told him I wanted you to keep on reporting directly to me. He agreed. There'll be no essential change in your operations—but your title is now assistant to the president for safety. It means a little something in your next paycheck."

SAFETY EQUIPMENT FOR ALL INDUSTRIES

**SAFE STORAGE
FOR EXCELSIOR
AND OTHER
INFLAMMABLE
MATERIALS**



Meet all fire regulations of Insurance Companies, State and Municipal authorities.

WRITE FOR BULLETIN NO. 63

IPCO SAFETY STORAGE BINS

For shipping and receiving rooms and other plant areas where excelsior, paper, rags, paint and other combustibles are used. Sturdily manufactured of heavy gauge galvanized iron with reinforced angle corners. Fitted with fusible link so cover is allowed to close automatically in case of fire.



Safety Equipment for all Industries

INDUSTRIAL PRODUCTS COMPANY

2850 N. FOURTH STREET, PHILADELPHIA 33, PA.

Gasket Company Honored For Safety Record

Victor Manufacturing & Gasket Company has been honored for a safety record spanning more than 1,000,000 hours.

O. W. Clifton, vice president and works manager, received a safety plaque from Joseph E. Magnus, president of the Chicago agency of James S. Kemper & Company, and R. E. Dalstrom, midwest safety director for Lumbermens Mutual Casualty Company.

Dalstrom commended Clifton for his company's record of 1,016,253 man-hours worked without a single lost-time accident. Victor, which manufactures gaskets and oil seals for autos, trucks and farm equipment, is located in Chicago.

Industrial Hygiene Award

DR. LEONARD GREENBURG of the New York State Department of Labor has been designated the 1952 winner of the Cummings Award, highest honor of the American Industrial Hygiene Association, for his work in the field of industrial health and safety.

The Association cited Dr. Greenburg, director of the New York department's Division of Industrial Hygiene and Safety Standards, for his "contributions to the knowledge and practice of the profession of industrial hygiene." The award certificate was presented to Dr. Greenburg by Dr. Anna M. Baetjer of Johns Hopkins University, outgoing president of the A.I.H.A.

Dr. Greenburg was selected for the 1952 honor because of his "great work in the medical, engineering and administrative aspects of industrial hygiene" and because he had "welded the activities of his Division together to establish a professional technical service that has been of very great benefit to the industries of New York State and their employees, and for which those industries have the utmost respect."

A native of New York City, Dr. Greenburg obtained a degree in civil engineering from Columbia University and then entered the field of industrial hygiene before leaving it temporarily to obtain a medical degree from Yale University.

BEAT THE HEAT!

NEW

E-X-P-A-N-D-E-D COTTON* SWEATBANDS

ONLY 2½¢ EACH



FEATHER-LIGHT—You feel only soft cool, comfort!

***E-X-P-A-N-D-E-D COTTON**—Cotton-backed gauze expanded to 8 times normal thickness!

FOUR-LAYER FOLD—Extra absorbent capacity!

NO METAL—Only pure cotton and cotton-covered elastic. No rusting, chafing, no discomfort.

So inexpensive, they can be used and thrown away... So strong, they can be rinsed and used repeatedly!

Here's the answer to perspiration... super-soft, super-absorbent E-X-P-A-N-D-E-D COTTON SWEATBANDS. Real comfort for those hot-spot jobs... a better band at a lower price.

Perfectly designed. No metal parts to rust or chafe, cotton-covered elastic holds band firmly but you can't even feel it. Get E-X-P-A-N-D-E-D COTTON SWEATBANDS from your regular dealer in safety or first aid supplies. Write us for free sample today.

GENERAL BANDAGES, INC., Chicago 5

Makers of GAUZX—The bandage that sticks to itself

FOR PROTECTION AGAINST—

POISON IVY and POISON OAK

For more than a decade IDU Skin Lotion has been giving outdoor workers, linemen, utilities workers, gardeners and foresters the protection they need from poison ivy and poison oak.

These two spring and summer-time hazards to health and efficiency may soon become troublesome. Be prepared!

Don't let these irritating conditions develop—use IDU for their prevention. Order Now.

Available at the following prices: 4 oz. bottles, \$6.00 a doz.; 8 oz. bottles, \$10.00 a doz.; 1 pint bottles, \$16.00 a doz.

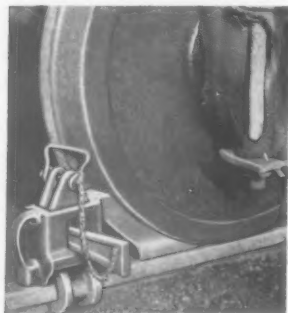
Send for a free sample on official company stationery today.

I. D. U.

PRODUCTS CO., WAUSAU, WIS.



USE THE M & M RAIL CLAMP



it will not slip

Because the M & M Rail Clamps hold car wheels fast, it reduces danger of injuries to employees and costly accidents. It is a compact, complete unit that can be put in position in a minimum amount of time—no blocks, ties or shims necessary.

The M & M Rail Clamp is built to withstand weight of heaviest cars. Body is electric furnace steel casting; lugs and wedges are highest grade drop forgings. Wedge is attached with strong steel chain to clamp. Sturdy handle makes carrying easier.

Made in two sizes to fit any rail, worn or new—Model A-40 to 100 lb. rail; Model F-110 to 175 lb. rail. Order now for immediate delivery.

**SAFETY FIRST SUPPLY
COMPANY**

425 Magee St.
Pittsburgh 19, Pa.



sity. He was Health Commissioner of the City of New Haven, Conn., for two years before taking over his present post with the New York State Department of Labor in 1935.

The Award is presented annually in memory of Donald E. Cummings, a pioneer in industrial hygiene, who died in 1942. Working at the Saranac Laboratories in New York State and later at the University of Denver, Mr. Cummings was noted for his studies which aided in reducing tuberculosis among miners.

Slug Casting Machines

—From page 48

Squirts

13. The greatest hazard in the operation of slug casting machines comes from the hot metal squirts which result when a line of matrices is not held tightly in the casting position. There are numerous causes for squirts. Generally they result when a group of imperfectly aligned matrices is cast.

14. If the vise faces are not free from rust, oil, or whiskers, squirts may result. If the vise is not locked securely, a front squirt may result. Some keyboard machines are provided with an automatic pump stop, frequently referred to as the short line attachment, and when this device is properly adjusted no line will cast until it is properly filled. When short lines are cast, squirts sometimes occur because the jaws do not have time to make up tight against the line of matrices. If the pump stop lever is left in the open position when the short line is cast, a squirt will occur.

15. Though an experienced operator usually can hear a squirt coming in sufficient time to get out of the way, the machine cannot always be trusted to announce this failure. For this reason operators should wear safety glasses or face shields and keep their collars closed and sleeves buttoned at the wrists. A visored cap is also useful in deflecting squirts from the face or eyes.

16. A rigorous inspection and maintenance service is the best

protection against squirts. The alignment of the first elevator with the delivery channel should be checked frequently. Plungers should be cleaned regularly. Worn matrices should be replaced.

17. The analogous hazard for hand set machines results when a dirty die holder is used or when the die holder is improperly seated.

18. Most hand set machines are equipped with interlocking devices to prevent large squirts. In some cases these machines can be reworked to prevent the plunger from moving at all until the die holder is properly seated.

19. Glass or plastic shields have been tried on keyboard machines to deflect squirts from the operator. They have not been too successful because they interfere with the operation of the machine. Shields connected to the melting pot, which move down to cover the line of matrices just before the cast, are generally considered objectionable because they do not give the operator a clear view of the justification process.

20. Metal splashes from pig ends can be eliminated if slotted eye pigs are used. Automatic feeding devices should be kept in good condition. If they are allowed to get into poor condition, they may drop the pig into the melting pot and cause splashes.

Mechanical Injuries

21. Severe finger injuries are suffered by keyboard machine operators who try to remove matrices from a squabbled line in the jaws of the first elevator. Squabbled lines should be corrected only while the clutch is disengaged. Machine operators should understand that no time is saved in not using the clutch.

22. An operator should not attempt to adjust the spacing of a line of matrices in the space bands in the assembler. The return of the delivery carriage may mash his fingers. Rather he should reject the line by holding the pump stop lever closed and allowing the machine to go through the operating cycle. Then he should reset the line.

Don't Let **ATHLETE'S FOOT**
Bench YOUR Players!

ALTA-CO BUILDS MORE
EFFECTIVE TEAMS!



In baseball, track, swimming and ANY sports competition, **HEALTHY** teams are **WINNING** teams. ONE member with painful, distracting Athlete's foot can impair the efficiency of your entire team.

Here's the Sound Tested Program
for **ATHLETE'S FOOT** Control:

1. ALTA-CO POWDER

... for the all-important foot tub in your shower rooms. One pound to a gallon of water kills common Athlete's Foot fungi in **LESS THAN A MINUTE!** Non-irritating; harmless to towels. Easily tested for proper strength with Dolge Alta-Co Powder Tester.

2. ALTA-CO FOOT POWDER

... for dusting, gives additional protection against re-infection. Soothes while drying between toes in shoes and socks, this potent but gentle fungicide does its work where Athlete's Foot fungi flourish.

3. ALTA-CO 300 H.D. FUNGICIDE

... for your daily, systematic washing of shower room floors. In economical solution (1 to 300), its action is both fungicidal and bactericidal, giving your floors the same hygienic sanitation you demand be taken by each user of your facilities.

Write for 36-page illustrated booklet,
"Athlete's Foot—A Public Health Problem"



COTTERMAN

WELDED STEEL SAFETY LADDERS
For Filing Rooms—Stock Rooms—Vaults



54"—6 Step

Mounted on Swivel Brake Casters which allow the ladder to be rolled freely when no one is on it. When you step on the ladder the rubber cushioned legs rest on the floor and prevent rolling.

Made in 7 heights:—18" 2 Step, 27" 3 Step, 36" 4 Step, 45" 5 Step, 54" 6 Step, 63" 7 Step, 72" 8 Step.

All are made in either 19 1/2" or 25 1/2" width.

Send for Circular No. 51-N and prices on these ladders and our full line of Wood Rolling Ladders.

Manufactured by

I. D. COTTERMAN

4525 N. Ravenswood Ave. Chicago 40, Ill.

SAFE

• **STRONG**

• **EASY TO MOVE**

• **EASY TO CLIMB**

• **NON-SKID STEPS**

23. The cams and power supply linkages at the back of most key-board machines are usually not guarded. In view of the general recognition given the hazards of exposed belts, pulleys, and cam shafts, this is surprising. To enclose the back and two sides of a slug casting machine, an inexpensive shield can be made of expanded metal or chicken wire stretched on a wooden or angle iron frame. At the back of the machine, the shield should extend from the footboard upward to the distributor bar.

ACKNOWLEDGMENT

This data sheet was written by Eugene Ernest, Safety Officer, U.S. Government Printing Office. It was reviewed by the Executive Committee of the Printing and Publishing Section and the Publications Committee of the Industrial Conference of the National Safety Council.

**Safety Helps
Public Relations**

—From page 39

effective. If it does, you may be certain that once again we shall be happy to share it with others in the field.

Or, take another illustration typical of the safety policies of large companies. We do a great deal of sub-contracting. On one job alone, that of Fairless Works, 200 prime contractors and a total of 4,000 sub-contractors are employed. Here is another fertile field to be cultivated in the never-ending drive for greater safety. On every U. S. Steel project, the U. S. Steel engineer in charge has personally assumed responsibility. He works with the contractor to make sure that every job is performed in accordance with our Corporation safety standards.

Most modern definitions of public relations lay emphasis first on sound policies and second on informing the public about those policies. A recent definition was "doing good, and then talking about it."

Safety men have surely fulfilled the first part of this definition. In fact, we in public relations have learned from your experience. In your work you have demonstrated time and again that preventive engineering, which avoids accidents, is even better than a trained

**SAFE
FLOORS**

...even when
wetted!



• **SUPER-SAFE**

• **MAR-RESISTANT**

CETOX

Hydroxated Carnauba Dressing
for all floor surfaces

CETOX contains chemically hydroxated Carnauba. No abrasives or silicas added. The slip is out. Its dazzling self-lustre, tough to mar qualities, and safety under foot are amazing... even under tracked in or spilled water.

Make the all-weather CETOX test. Put CETOX on your floor. See how it withstands heavy, abrasive foot traffic—throughout rain and shine. Get Super Safe CETOX for your floors.



Listed by Underwriters' Laboratories, Inc. as anti-slip floor treatment material.

Approved by York Research Corp. for the American Hotel Assoc.

**CETOX
Products Co.**

HOWARD & WEST STREETS
BALTIMORE 30, MARYLAND



**You
Can't
Fall
It is
a Life
Saver**

IT LOCKS—IT HOLDS

SAFETY DEVICE FOR LADDERS

Prevents Injuries by Falling

EASY TO INSTALL

Fastens to Rung, Peg, Pole or Frame

SIMPLE TO OPERATE

Men Can Climb—No Instruction

SAFETY SPECIFICATIONS

High Safety Factor—
Will Not Rust or Corrode

Write for Folder

Safety Tower Ladder Co.

P.O. BOX 1052

BURBANK, CAL.

This steam gun cuts cleaning time by 50%



The Oakite 481 Gun fuses heat, force, powerful detergent to get under, lift off all deposits, even in hard to reach areas and up to 12 feet above working level. Cleans and rinses at the twist of a valve. Can't be beat for cleaning machinery, conveyors, walls, floors. Tops for paint stripping, too.

FREE FOLDER gives facts. Write Oakite Products, Inc., 14D Rector St., New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING
OAKITE

MATERIALS • METHODS • SERVICE

Technical Service Representatives Located in
Principal Cities of United States and Canada

squad to rescue the victims of accidents which occur.

In the same way, we in public relations believe that we should function much as does the safety engineer. It is better to evaluate the public relations aspects of policy before that policy is decided upon. That is why public relations must stem from top management. Otherwise the public relations man will spend too much time in cleaning up debris rather than in promoting good will for the organization.

There is one thing that all of us can learn from the history of the safety movement. Pioneers in accident prevention soon learned that proper safeguarding of equipment did not solve all safety problems. They learned, too, that ballyhoo, slogans, shows and stunts were not sufficient to cut the accident rate. It was only when top management, and individual supervisors, started to assume responsibility for safety, and when the cooperation of all was sought, that progress was made. After all, the finest equipment, the best engineering and the most comprehensive rule book will fall down on the job if supervisors do not assume responsibility for safety in their departments and if there is no individual cooperation by all employees.

This points a moral that is applicable to public relations. Unless each of us assumes responsibility for telling our company's safety story, the job cannot be done. True, your public relations and advertising men can discuss safety in news releases, in booklets, in paid advertising, and in employee magazines. You can use movies, radio and television.

Yet people do not form opinions only upon information they receive through these mass media. Very often opinions come from facts and ideas picked up in day-to-day conversations. Here is a field where each of us, as an individual, can do an important service. When, in a social, fraternal or business group, or in plain chatting over the back fence, we hear a bit of misinformation about industrial safety we often can correct it on the spot. You who are in the safety field have statis-

tics at your finger tips so that you can refute immediately wild and unfounded statements about accident rates in industry. It should be the objective of every plant management to see that the facts about safety are better understood by all supervisors and employees.

With this understanding, you will find that the climate of public opinion in your plant community will improve. Many are the organizations which already have found this to be true.

Much more is at stake in the continuing battle for improvement in safety than the important question of holding to a very minimum the accident toll in our country. The long and, at times, discouraging fight to make every man, woman and child safety conscious is, in my judgment, a part of the constant effort that goes on in this country for the improvement in the welfare of the individual—an effort which places the preservation of life and limb above materialistic considerations.



**DON'T LOSE
MAN HOURS!**

due to
**POISON OAK,
POISON IVY
OR
POISON
SUMAC -**

No First Aid Kit
is Complete
Without -



**MEDICATED
OINTMENT**

Definitely Non-Toxic -

**Does Not Damage Delicate Tissue
AS A PREVENTIVE**

APPLY THOROUGHLY TO EXPOSED PARTS OF FACE, HANDS AND BODY BEFORE ENTERING POISON OAK, POISON IVY AND POISON SUMAC AREAS. WHEN SYMPTOMS OF RHUS DERMATITIS ARE NOTED, APPLY AS AN ALLEVIATIVE.

For your convenience & to fit your first aid kits.
3 ounce - 1 1/2 ounce & 1/2 ounce tubes

NOW SOLD THROUGH

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MINE SAFETY APPLIANCES CO. ETC.

REFERENCE AND LITERATURE ON REQUEST.

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Perfect Balance Perfect Comfort



It's the Sellstrom No. 243 One-Piece Welding Helmet, made of tough fibre, designed for perfect balance and utmost comfort.

Can quickly be adjusted to fit any head. The helmet front is held in desired position by adjustable tension springs. Specially designed vulcoid headgear with genuine top grain leather's leather forehead cushion held in place by snap fasteners. Hood perfectly balanced for increased comfort. Fitted with standard 2" x 4 1/4" window and improved patented lens retainer, permits changing lenses from the front. With or without plates.

Order from your dealer or write direct for a sample helmet for inspection purposes.

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WOMEN Work Better

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- ★ SLACK SUITS
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WRITE for complete information on styles and prices

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Calendar Contest Winners for May

First prize in the National Safety Council's Safety Calendar Contest goes this month to Mrs. John Dougherty of Troy, New York. Mrs. Dougherty is an employee at Behr-Manning, Inc. The theme in this contest was poor planning causes accidents. Mrs. Dougherty's line was adjudged best of all those submitted. It was:

Shouldn't start till he's checked everything.

Second prize went to Mrs. Nowassa Lenard of Benton, Illinois, for this line:

'Fore you start, be real smart, plan the thing.

Third prize was awarded to Dorothy C. Wilson of Midland, Michigan. She is an employee of the Dow Chemical Company. Her winning line was:

Proves the value that forethought may bring.

Thirty \$5 awards were issued to:

Arthur L. Howe, Remington Arms Corp., Bridgeport, Conn.
W. Arthur Hutton, John Deere Co., Des Moines, Iowa.
Joe Slosarek, Socony-Vacuum Oil Co., Gary, Ind.
Carole Domann, Abilene, Tex.
Paul E. Lange, Jackson Heights, N. Y.
Mrs. C. H. Stone, Macon, Ga.
C. W. Berger, Berry Asphalt Co., Waterloo, Ark.

Mrs. Frank Belitsky, Akron, Ohio.
R. Norris McCane, Tolleson, Ariz.
Mrs. Andrew Norwalk, Cheektowaga, N. Y.

Mrs. Ned Fish, Columbia, Mo.
R. Cheyne-Stout, Orlando, Fla.
Mrs. Virginia Mansfield, Seekonk, Mass.

Mrs. W. E. Sanders, Bessemer, Ala.
Mrs. Jean Luncford, Walton, Ore.
E. J. Jeffrey, U. S. Navy, Arlington, Va.

Mrs. Rose B. Frank, St. Charles, Ill.
G. E. Gambler, P B & N E Railroad, Bethlehem, Pa.

Mrs. Eva Alexander, Owen Dyneto Co., Syracuse, N. Y.
Nell E. Frick, Signal Mountain, Tenn.
Mrs. Helen R. Barrett, Salt Lake City, Utah.

Mrs. Caroline F. Wilson, Charlotte, N. C.

W. E. Ramage, Tampa, Fla.
Mrs. B. Guy Cross, Loudon, N. H.
Mrs. Kathleen S. Tidwell, Atlanta, Ga.

Charles C. Jaskey, South Bend, Ind.
Daisy McCutcheon, Dillon, S. C.
Edith Katherine Guynn, Hillsboro, Ohio.

Minnie Maze, Henry & Hardesty, Inc., Monogah, W. Va.

Mrs. Glenn O. Trent, Moberly, Mo.

We should live and learn; but by the time we've learned, it's too late to live.

THIS **FREE** BOOK

CAN HELP

PREVENT THIS

Especially written for safety inspectors and maintenance supervisors directly responsible for the safety of press operators, "Power Press Protection" is yours for the asking. Contains valuable information on the maintenance and safe operation of power presses. Send for your copy today.

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MERRILL

MATERIALS HANDLING DEVICES

4 SIZES

LIFTING CLAMP

TWIN LIFTER

HAND GRIP

DRUM TILTER

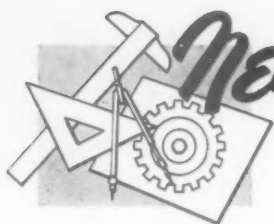
4 SIZES

DRAG CLAMP

DRUM OPENER

3-1/2

MERRILL BROTHERS
56-28 ARNOLD AVE., MASPETH, N. Y.



New safety equipment for industry

Manufacturers are invited to send in announcements of new products, or improved special features. Only items which can be considered as "news" to our readers will be published.

Concrete Floor Hardener

A new improved liquid treatment which hardens and dustproofs concrete floors to withstand heavy trucking is announced by The Monroe Co., Inc., 10703 Quebec Ave., Cleveland, Ohio.

Known as Concrete Floor Hardener No. 860, this clear, colorless liquid is reputed to change the chemical structure of concrete on which it is applied, forming a dense, non-porous, flint-like surface which retards dusting and rutting. By doing so, it is said to prevent dust damage to machinery, electrical equipment and merchandise and reduces the necessity for frequent floor patching. By granitizing surface particles, the hardener also increases the general strength of a concrete floor and retards cracking and chipping under heavy loads. Easily applied by brush or mop, the hardener is reputed to lower cleaning and maintenance costs and to resist water, oil and acid.

Fire Extinguisher

The Redi-Flow, a new, fast-flowing dry chemical fire extinguisher is now being marketed by Stop-Fire, Inc., 125 Ashland Place, Brooklyn, N. Y. Designed to avoid faulty operation due to clogging, the new unit contains Dri-Kem, an improved dry chemical obtained by introducing an additive which coats the powder particles and



forms a water-resistant skin over each crystal. Dri-Kem not only adds to the free-flowing qualities of the chemical, but eliminates the necessity of large quantities of moisture-proofing ingredients. The small percentage of ingredients which is added to the extinguishing agent—sodium bicarbonate—permits a greater volume of sodium bicarbonate to be used, thus increasing the fire-killing effectiveness of the unit.

A new feature is the one-hand operation.

A newly designed locking mechanism prevents accidental discharge but permits the operator to place the unit in action swiftly with a single release-squeeze motion. The extinguisher, which carries the "Underwriters' Laboratories approval, is being produced in 3, 5 and 10 lb. units.

Lifters

A new series of Electraulic Four Post Lifters has been designed by Service Caster and Truck Corp., Albion, Mich. The "Four Posters" facilitate heavy loading of trucks and railway cars, and are especially fitted to level-to-level and floor-to-floor movement of trucks and skids, materials, heavy parts, etc., in plants or warehouses.

Electric-hydraulic powered and designed for continuous operation, the device features higher load capacity, higher speed



lifting, larger platforms and greater lifting range than electric-mechanical type lifters. Safety features include: Minimum safety factor of 4 used throughout the lifters; "Deadman" type pushbutton controls; expanded metal platform guards; safety tread "non-skid" steel platforms; positive stops to prevent overtravel of rams; overload relief in hydraulic system and post rings that lock platform to posts if chain should fail.

Models are available in capacities from 2000 to 12000 pounds and platform sizes from 5 x 5 ft to 12 x 12 ft. Lifts range from 5 to 17 ft. at speeds from 8 to 23 ft. per minute. Versatile design permits the lifters to be made up as semi-specials to meet specific job requirements.

Pouring Spout

General Scientific Equipment Co., 2700 W. Huntington St., Philadelphia, Pa., announce a pouring spout and tilter for pouring liquids into smaller containers. It is designed to prevent accidents and to save materials, caused by spilling or splashing. A chain is provided to hold the bottle

in position when tilted. The cradle is made of steel. All members are riveted or



welded to insure a strong and durable unit.

The safety air vent pouring spout fits any size bottle and assures a smooth even flow without spurts or splashes. The unit is made of a special acid-resistant rubber and plastic tubing.

Cup-Type Goggles

A new line of cut-type goggles has been introduced by Fendall Co., 4631 N. Western Ave., Chicago. Included in the new line are chippers, welders, and dust and splash goggles which incorporate many new features that provide comfort to the wearer, plus safety. It is claimed the new goggles exceed requirements of Federal Specifications.

Emphasis is placed on the comfort design and pressure-free fit of the eye cups, with each cup individually molded to conform to both right and left eye areas of the face, with smooth wide-bearing facial contact surfaces that evenly distribute the weight for added comfort. More than 300



perforations in side-shield allow ample air circulation, and added ventilation through slots in lens ring provides circulation across inner lens surface to reduce fogging. Herringbone-shaped channels in lens seat admit air but block out foreign particles. Cups are unaffected by moisture or perspiration.

Both the dust goggle and chippers' goggle are available in transparent models with special side-shield ventilation. All goggles have ball-chain nose bridge, with

New safety equipment for industry

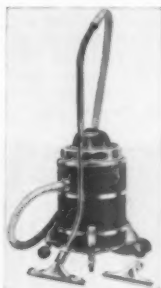
Further information on these new products and equipment may be obtained by writing direct to the manufacturer. It will help in identifying the product to mention this announcement.



quick acting lever-type lock for easy adjustment. Lens rings are free-turning, screw type of anodized aluminum for easy lens changing. Long stretch headband is adjustable. A wide range of protective lenses is also available.

Vacuum Cleaner

The new Finnell Model 10B Wet-Dry Vacuum Cleaner features a by-pass motor, assurance against grounds when picking up suds or dust. Since the vacuum air stream does not pass through the motor, neither dust nor moisture can injure it. A separate fan keeps the motor cool during prolonged periods of operation.

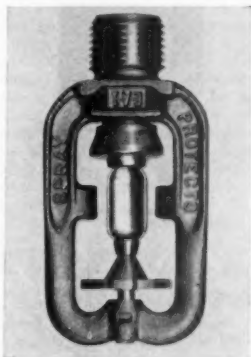


The machine has a 1-hp motor, operates quietly, and weighs only 53 pounds. It is easily moved about since it rides on ball bearing swivel casters. Twelve gallon wet capacity and 1-1/3 bushels dry assure long operation before emptying is required. A large number of accessory tools equip the 10B for hard-to-get-at places such as overhead pipes, grills, venetian blinds, air filters, etc. Although light in weight for portability, the machine is sturdily constructed for heavy-duty work. The model is available for immediate delivery and further information may be had from the manufacturer, Finnell System, Inc., 2200 East Street, Elkhart, Ind.

Automatic Sprinkler

Grinnell Co., Inc., 260 W. Exchange, Providence, R. I., has developed a new automatic ProtectoSpray for quick extinguishment of fires. When used in place of standard automatic sprinklers for special hazard protection such as high piled tire storage, it reduces ceiling scorching and checks fire spread with 30 per cent less water.

The heat from a fire normally raises the temperature of nearby flammable material to its distillation and ignition temperatures. The automatic ProtectoSpray diverts this heat to vaporize water droplets.



This removal of heat checks the spread of fire and the resulting water vapor dilutes the flame gases so that they will not burn. Producing a wide range of water droplet sizes, small ones to produce water vapor and larger ones to wet and cool the burning material, this device provides a new and effective weapon against fire. It has been tested and listed by both the Factory Mutual Laboratories and the Underwriters' Laboratories.

Protective Clothing

Welders' protective clothing, designed exclusively for industry's feminine workers, is announced by American Optical Co., Southbridge, Mass. Styled to allow free



and easy movement of the body, yet fitting so snugly that there are no gaps or openings to permit entrance of flying sparks, the clothing is light in weight while still providing the proper protection.

The tailored overalls look like women's slacks. A side placket insures a trim, comfortable waist line. The flared trouser legs provide additional protection for the feet and make the garment easy to put on and take off over safety shoes. The yoked backs of

the tailored coat and short jacket give greater freedom of arm movement. Tucks running down from the shoulders in front provide ample fullness and flexibility at the chest. The sleeves are shaped to fit and the seams are welded and located away from the direct line of fire. The garments are made of specially selected chrome tanned leather, simulating a soft, suede-like appearance.

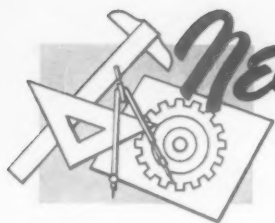
Blasting Unit

A new multiple-shot blasting unit, said to incorporate improved firing action, safety and dependability in a compact and lightweight assembly, is being introduced by Mine Safety Appliances Co., Pittsburgh, Pa. The new unit (U.S. Bureau of Mines Approval No. 1608), weighs 1 lb., measures 2 1/2 x 2 1/4 x 4 3/4 in., is carried on the belt by means of a snap-on clip. It will fire up to 10 shots simultaneously. There is no danger of accidental firing, as the wiring



circuit is insulated from the battery container. And because the new unit is capacitor-operated, the full charge is dissipated with each shot, eliminating misfires. The top of the battery container and the push button lead retainers also are insulated. The dry cell batteries are housed in a moisture-resistant case.

The firing plug is equipped with brass contact terminals. Lead wires are firmly held in the firing plug by spring-loaded retainers. When lead wires are inserted, and the firing plug pressed firmly into the battery container, a neon light glows at the top of the case to indicate a full charge in the capacitor. Release sends high voltage to detonate the charge.



New safety equipment for industry

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Flashing Lanterns

The Iustrite Manufacturing Co., 2061 N. Southport Ave., Chicago, has introduced a new safety red flashing lantern for use in all Class I, Group D hazardous locations as well as other spots requiring a warning or marking light.

This portable, battery-powered lantern, Model 2146-S, houses a red lens and a sliding switch assembly controlling two bulbs. One position of the switch produces a steady red beam, which can be instantly changed to a flashing red light



merely by moving the switch. Additional safety features include a "kick-out" bulb socket which eliminates danger of explosions in the event of a broken bulb, heavy wire guard which protects the globe against breakage, spark-proof construction of all protruding parts, and mounting on a movable base which makes the beam adjustable to any desired angle. In addition, the light has the approval of Underwriters' Laboratories, the U. S. Bureau of Mines, and the U. S. Coast Guard Merchant Marine Technical Division. Blinking power of the safety lantern is good for in excess of 52 hours of continual burning.

Conductive Footwear

Walter G. Legge Co., Inc., 101 Park Ave., New York, announces a new development for protection against static electricity explosions known as the Conductive Bootie. The Bootie is made of cotton sail cloth, with conductive sole applied. Contact is maintained by means of a chain which connects the conductive sole with a metal plate worn in an elastic garter

around the calf of the leg, or on the flexible conductive band at the top of the Bootie. Tested to 250,000 ohms resistance, the Bootie resistor unit offers protection



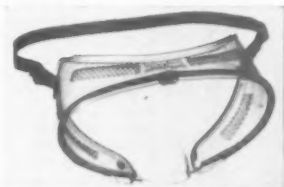
sufficient to withstand direct contact with a live wire or short circuit, the manufacturer states.

Made in three sizes, small, medium and large, for male and female, the Bootie is sterilized after each wearing, and no pair need be individually assigned. Chain, elastic garter and resistor unit are removed before sterilizing and easily readjusted afterward—or entire unit may be wholly sterilized.

Sterilization offers sanitary protection as well as safeguarding the soles from the adherence of wax deposits which tend to insulate the wearer from the conductive floor. The problem of sparks from the floor to the nail heads of shoes is also overcome. The manufacturer suggests hospitals store the product in scrub-up rooms adjacent to operating rooms. Ample space can be found in supply rooms of industrial establishments, since the Bootie, folded down, occupies very little space.

Plastic Goggle

An improved, all-plastic safety goggle is being offered by Willson Products, Inc., Reading, Pa. Outstanding feature of the new goggle is a flexible, fully transparent



frame molded of Vinylite. Although the new frame comfortably conforms to all

facial contours, a newly designed lens retaining feature adds sufficient rigidity to the frame so that there is no sacrifice of protective efficiency.

The lens is of .060 inch acetate, and is separately replaceable. The goggle provides all-day comfort, since it weighs just over an ounce. It fits easily over all types of prescription glasses. It is known as the Willson No. 91 MonoGoggle.

Portable Emergency Shower

Emergency showers usually are installed at a point or points where they will be easily accessible to the largest number of persons involved. Now equal accessibility to this protection is being demanded for employees at points of remote hazard or where physical conditions do not permit permanent installation. To meet this demand, Logan Emergency Showers, Inc., Glendale, Calif., has developed a mobile shower. It is a portable unit that can be moved from place to place quickly and



easily, and can be used wherever a water supply is available. Couplings for connection to the water system are furnished with the unit.

Mobility is achieved by easy rolling casters of ample size. The unit is held fixed in position by means of adjustable truck stops. A ramp is provided, for easy access to the shower, which locks into position out of the way when shower is being moved. Although only four men are required to load the shower on a truck, the construction employed in the base is so sturdy that it provides maximum stability when exposed to reasonable winds.

The use of new techniques in spraying water makes it possible with this unit to rapidly quench fire and to rapidly dilute and remove acids or other chemicals and

New safety equipment for industry

Further information on these new products and equipment may be obtained by writing direct to the manufacturer. It will help in identifying the product to mention this announcement.



foreign materials contaminating clothing or the human body. This performance is accomplished by an ingenious arrangement of sprays—four overhead, two special sprays for eyes and face, and four bottom sprays that direct water upward under smocks, coats, etc. In addition, four streams are directed to the feet. Shower can be entered from either of two sides. Valve for turning on water is operated by swinging gate that is activated by slightest pressure applied by any part of the body of the user. Valve remains open until manually closed, leaving hands free.

"Packaged" Extinguishing System

For the first time "packaged" automatic carbon dioxide systems are available for installation by the customer. Designed and manufactured by Walter Kidde & Co., Inc., Belleville, N. J., to protect normal industrial types of flammable liquid hazards of up to 6,000 cubic feet, the new system may be adapted for protection against special hazards. However, custom-engineered installations probably will continue to be required for areas where carbon dioxide, hydrogen, carbon disulphide, butane, propane, etc., are stored.

For many years Kidde has made packaged extinguishing systems for yachts and smaller boats, which meet Coast Guard approval. The new Standard Pak system answers a similar need for protection against

Multijet nozzles, and a cylinder-supporting frame. Cylinders are shipped as a separate item.

As it is impossible to know in advance just what accessory equipment any customer will require, they are not included in the basic package, but may be ordered separately. The systems may be ordered with or without pipe and fittings. If pipe and fittings are ordered, they are strapped together and shipped along with the carton containing the working parts of the system.

Among the accessory items available are remote control pull boxes for manually actuating the system from one or more locations other than at the cylinders, and pressure-operated trips that can be installed to close weight-operated doors and windows automatically when the system discharges, thus excluding oxygen and preventing escape of fire-killing gas. Provision can also be made for shutting down ventilation and machinery by inclusion in the system of pressure-operated switches. Alarm gongs and pressure-operated sirens also are listed among the accessories available.

Once the system has discharged, it can be put back into operating condition simply by recharging the cylinders and resetting the head. To reset the head all you have to do is turn the reset screw with a screwdriver. Arrows on the head show the position of the reset screw so that a glance will tell whether or not the system has operated.

Air Filter

Developed originally to remove radioactive contamination from air exhausted during atomic energy plant operations, a new type of air filter, called the Ultra-Aire space filter, has been made available for general industrial, institutional and laboratory use by Mine Safety Appliances Co., Braddock, Thomas and Meade Sts., Pittsburgh, Pa.

Each filter is reported to be tested against fine chemical smoke and is certified to be at least 99.95 per cent efficient against particles as small as 0.3 micron in diameter. In practice, the filter removes particles as finely divided as tobacco smoke, particles of which range from .05 to .1 of a micron.

Simple in design and construction, the filter offers 46,000 square inches of filter media in the 1000 CFM size, and is available in air flow sizes of 50, 500 and 1000 CFM. Its effective service life, when protected by a roughing filter, is about a year and a half.

The new filter is said to have many applications where toxic and radioactive

particles are a threat to health or production processes. In hospitals, it safeguards against bacteria and some virus when they are air-borne in operating rooms, isolation wards, and experimental laboratories. In the manufacture of pharmaceuticals the filter prevents product contamination in processes where air conditioning is vital to manufacturing. It can be made a part of an air conditioning system, either in the intake or exhaust. It can eliminate radioactive contamination of photographic film and chemicals. Food processing plants can put the filter to work to trap spores which might cause spoilage and to eliminate bacterial contamination of food products.

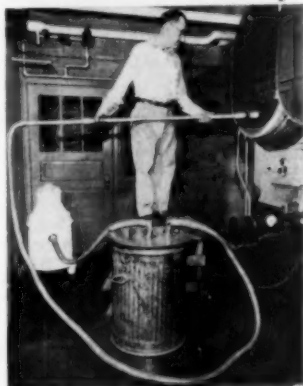
"Add-A-Tank"

A regular industrial vacuum cleaner can be used on all kinds of extra heavy volume vacuum cleaning, including furnace and boiler cleaning, without danger of clogging tank and filters, getting ashes into the vac motor and bearings or burning vac hoses with hot clinkers, says Multi-Clean Products, Inc., St. Paul, Minn., manufacturers of heavy-duty vacuum cleaning accessories.

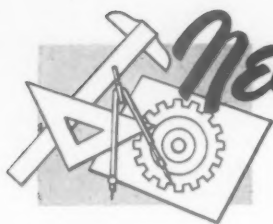
With the attachments available from Multi-Clean any standard 30-gallon or



the flammable liquid type of fire hazard encountered in a wide variety of industrial plants. Components of the new packaged systems are approved by the Underwriters' Laboratories and systems come in six sizes. Each package contains temperature-rate-of-rise fire detectors and connector tubing, automatic control heads, discharge heads,



smaller ash can may be added onto the suction line of an industrial vac. It operates on either wet or dry pickup with any industrial vacuum cleaner. The new tank is fast and efficient on tough jobs such as cleaning boiler flues, furnace fire boxes, large industrial chimneys, mill and factory machinery, elevator boot pits and scores of other heavy volume vacuuming jobs. Hazardous areas are vacuumed with-



New safety equipment for industry

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out danger of explosion, according to the manufacturer, as only the ash can assembly need be in the danger area, while the vac is left outside and connected with a sufficient length of hose.

Parts of the "Add-A-Tank" outfit are available individually. They include — cover plate assembly with 5 ft. of metal hose, 15 ft. metal hose assembly, extension pipes, flexible flue tool, flue scraper and wire brush tool. Other industrial vac attachments can also be utilized in connection with the tank for various cleaning jobs.

Tilt-Top Truck

Because, in one case, 2000 lb. broach holders could be handled only by crane, and because the crane could deliver the broach holder in only one manner, a means was required for positioning the broach holder for certain maintenance operations.



The Portelvtor tilting top truck was constructed by the Hamilton Tool Co., Hamilton, Ohio, to meet the need.

The table top, 24 x 96 inches, rotates 360° on a horizontal axis and can be locked in place wherever stopped. Back plate supports broach holders and fixtures as table tilts work to convenient position for service. Table service is 30 inches from floor. Truck rides on two wheels and four casters for easy maneuverability in restricted space. Floor locks at each end prevent unwanted movement. Capacity is 3000 lbs. The truck may be built to alternate specifications.

NEWS ITEMS

At the Chicago office of the Sellstrom Manufacturing Co. floor space has recently been increased by 35 per cent. In addition, a branch factory has been established and is now in operation at Grayslake, Ill. To achieve a 75 per cent production increase much new equipment has been installed. Three additional moulding machines have been added, making a total of seven. A new 2½ cubic foot "Wheelabrator" automatically cleans

"flash" or surplus plastic from goggle eye cups and helmet window frames. A newly developed machine using emery cloth quickly bevels the edges of welding plates. A new electronic machine accurately grades the welding helmet plates and welding goggle lenses. An atomic oven hardens goggle lenses to any desired degree of hardness.

* * *

Onox, Inc., 121 Second St., San Francisco 5, Calif., offers a free shower room layout plan. Shows how to avoid mixing of dressed and wet bathers and how to keep traffic confusion to a minimum. A copy will be sent on request.

* * *

At a recent meeting of the Board of Directors, The Boyer-Campbell Co., 6540 St. Antoine St., Detroit, the following officers were elected:

William P. Goudie, president and chairman of the board; John F. Phillips, executive vice-president in charge of sales; Robert G. Campbell, vice-president, secretary and general manager; James McMillan, vice-president and treasurer. At this same meeting the following were appointed: Fred W. Alern, assistant secretary; Harold McGuffin, assistant treasurer; Kenneth McBetchie, assistant general manager, and Clair Davis, sales manager.

* * *

Wheeler Protective Apparel, Inc., 224 W. Huron St., Chicago, announces the appointment of Guardian Safety Equipment Co., 214 S. 45th St., Philadelphia, as distributor of Wheeler products.

* * *

The Diversey Corp., 1820 Roscoe St., Chicago, announces various promotions in personnel. Donald V. Hannibal, assistant director of the Technical Development Department for the past year, has been named director. Mr. Hannibal joined Diversey in 1947, beginning as a chemist in the Diversey Research Laboratories.



B. B. Button, formerly assistant to W. E. Noyes, vice-president in charge of sales, has been named



general sales manager of The Diversey Corporation. As general sales manager, he assumes responsibility for sales of Diversey's seven divisions in the United States. Mr. Button joined the organization in 1939, working initially on technical development, service and research for the food industries. In 1942 he was promoted to assistant manager of the newly-formed Metal Industries Department and was named manager in 1945. Three years ago he was named assistant to the general sales manager.

C. R. Reid, for the past three years credit manager of Diversey, has been promoted to the position of assistant to W. E. Noyes, vice-president in charge of sales. Mr. Reid will analyze market potentials in connection with development and promotion of new products. He joined the company in 1946 as a credit correspondent. He was named department manager in 1949.



R. J. Keller, formerly assistant credit manager, has been promoted to credit manager. Mr. Keller succeeds C. R. Reid. Mr. Keller joined the organization five years ago. He began as a sales correspondent for the Central Division, subsequently moving into the Credit Department and was named assistant manager in 1950.



Never borrow from a friend what you can borrow from a stranger.

There's no better exercise for strengthening the heart than reaching down and lifting people up.

Trade publications

in the safety field

NEW

IDEAS



These trade publications will help you to keep up-to-the-minute on new products and developments in industrial health and safety equipment. They are free and will be sent by manufacturers without obligation to readers of NATIONAL SAFETY NEWS who are responsible for this work. Send in the coupon below checked for the publications you desire. Please make your requests promptly.

1. **Wire Rope Catalog:** Up-to-date reference book containing tables, data and helpful information on wire rope for all purposes. Macwhythe Co.

2. **"8 Things to Look for When You Wash Metal by Machine":** Booklet describes cleaning materials, suggestions on selection and operation of metal-washing machines. Oakite Products.

3. **Accident Prevention Signs:** Colorful folder illustrating caution, danger, safety first and directional arrow signs, with description of size, design and price listings. Stonehouse Signs, Inc.

4. **Mercury Lamp Transformers:** Bulletin 521-5 illustrates and describes indoor types (single and two lamp), and outdoor types (multiple and series circuit) for operation of all H-1 400 watt mercury lamps. Diagrams, dimensions, mounting methods and technical data included. Jefferson Electric Co.

5. **Dust Collectors:** Bulletin No. 322 describes the application of cloth dust collectors to the manufacture of roofing materials. Attention is given to the ventilation of mica and scrap recovery. Photographs illustrate case histories. American Wheelabrator & Equipment Corp.

6. **"Special Maintenance Coatings":** Bulletin describing special coatings for skid-proofing, rust prevention, weatherproofing, painting over damp areas and hot surfaces and other special maintenance work. United Laboratories, Inc.

7. **"Anti-Slip Floor Waxes":** Booklet illustrating and describing "Ludox" formulated with floor wax to give extra hardness and anti-slip protection to waxed floors. E. I. Du Pont de Nemours & Co.

8. **"Air Conditioning for Crane Cabs":** Bulletin No. 1301 describes use of crane cab coolers and conditioners to safeguard

health and efficiency of crane operators. Specifications for the various models and suggestions on where and how to use them are included. Dravo Corp.

9. **"Prevent Sudden Lighting Failures":** Pamphlet illustrating the Exide lightguard with a built-in relay that will instantly and automatically turn on a floodlight for emergency use when normal supply of electric current is interrupted. The Electric Storage Battery Co.

10. **"Boiler Water Level Controls":** 24-page catalog illustrating safety devices for steam and hot water boilers and heaters. Included for proper selection are capacity curves, dimension drawings and engineering information. McDonnell & Miller, Inc.

11. **"Safety on the Highway":** Colorful folder illustrating plain and reflectorized safety and traffic signs complete with the "A" Stand for mounting. Eastern Metal of Elmira, Inc.

12. **"Control of Industrial Dust":** 28-page two-color bulletin describes equipment and its many applications. Featured is the "CH" system of control which utilizes cloth type filters for the collection of finely divided dry dusts. Listed are specifications on size, dimensions and engineering tables. Pangborn Corp.

13. **"Bulk-Flo":** Book No. 2475 contains photographs of conveyors and elevators in a wide variety of applications, together with typical layout drawings, engineering data, tables, charts and formulas for mechanical handling of bulk flowable materials. Link-Belt Co.

14. **"Floors Without Flaws":** 12-page booklet describing care of floors in office buildings, institutions, factories, etc., and covers the conditioning, repairing and maintenance methods for wide variety of floor materials such as concrete, asphalt tile, cork, linoleum, magnesite, terrazzo, wood. A. C. Horn Co., Inc.

15. **"Infra-Red Gas and Liquid Analyzer":** Bulletin No. 0705-1 illustrates and describes analyzer designed for rapid analysis of fluid mixtures, precise control of either continuous or batch-type processes and accurate measurements of toxic contaminants in atmospheres. Mine Safety Appliances Co.

16. **"A B C of Fire Protection":** Bulletin features economics of fire protection and what "Automatic" Sprinkler means to you. Layout charts, detailed and descriptive information on all components of the system are given. Automatic Sprinkler Corp. of America.

17. **Sweatbands:** Bulletin features expanded cotton sweatbands for control of perspiration to keep eyes comfortable, glasses clean and provide sanitary protection. General Bandages, Inc.

18. **"Mechanical Stirrups":** Pamphlet illustrating swing stage and single stirrups equipped with either electric or air power controls for painting or cleaning buildings, bridges, window washing, exterior plastering, etc. Albino Engine & Machine Works.

19. **Eye Wash Fountains:** Pamphlet illustrates industrial emergency eye-wash fountain with shower attachment. Various types of drinking water fountains are also included. Haws Drinking Faucet Co.

20. **"Utiliscope":** Bulletin describes wired television which centralizes control of operations involving widely stationed personnel or dangerous operations. Device makes it possible to see the work process at close range even behind barriers or hundreds of feet away. Witte & Burden.

21. **"See Better—Work Better":** Bulletins Nos. 6 and 7 describe the many ways standard lamps can be used in industry in special applications. Also shows a wide variety of new lighting tools, and specially designed lamps for specific jobs. General Electric Co.

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JULY, 1952

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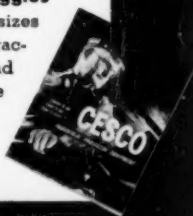


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